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THE AMERICAN FARMER:

DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

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"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." Virg.

Sixth Series.

BALTIMORE, DECEMBER, 1869.

Vol. IV.—No. 6.

DECEMBER.

"O winds howl not so long and loud;
Nor with your vengeance arm the snow;
Bear hence each heavy-loaded cloud,
And let the twinkling star-beams glow."

Work for the Month.

The chief interest on the farm at this season is to put everything snugly into winter quarters, making all suitable provision promptly, that nothing, whether stock or crops, may suffer from the pinchings of jack frost, or, worse still, from chilling storms of wind, rain or snow. One day's exposure to a cold rain will take away the profits of a week's good feeding, and a cow giving milk will show in the falling off of her daily flow (so experienced dairy people tell us) the cost of such exposure. The cow is not singular in this respect—she suffers under a general law.

STOCK-YARD.

For reasons above suggested, give the stock-yard special attention, having a place for everything, and everything in its place. All cattle should be now in good condition. The rich pasturage of the fall months, the temperate weather and exemption from flies and other annoyances, give them opportunity for their winter preparation. This thrifty state gives great advantage in the wintering, and with it is simply shameful to have them come out in the spring poor, hide-bound, with hollow-bones and other evils of poverty and destitution.

COWS.

Such cows as give milk must have comfortable stalls, entirely protected from the weather, and be fed with corn-fodder, clover hay or other good provender, with meal and bran, and roots of some kind. The profit in milk will be proportioned to the quantity of good food digested. Care must be taken here, however, that on any change of food it be not over-done as to quantity, but that the increase be gradual, up to the point of greatest profit. To adjust this properly, needs care and caution.

CALVES.

See that these are carried through the winter, not only with their lives, but thriftily and in growing condition. They need not be fattened or forced, but they should have a reasonable increase of bone and flesh from three months' feeding, and go out to pasture in spring with life and spirits enough to make a profitable run through the season of grass.

WORKING OXEN.

These should have a separate feeding place, and a due and regular supply of food. There should be no opportunity of their interfering with other cattle, or being interfered with.

HORSES AND MULES.

When these have regular work they must have, of course, regular attention, not only as to food and water, but grooming and stabling. Especially is it needful to rub and dry them off, and clean their legs and feet of mud, &c when they come from work. Boxes instead of stalls, with a pair of work-horses to each box, would be a great improvement.

SHEEP.

Sheep have better health for a free range of the pasture grounds during good weather.—This gives them, however, a distaste for their dry food, which should, therefore, be of such quality as to tempt them. It is found good economy to give a small quantity of grain daily, if done with proper judgment. A shelter must be provided for bad weather, and when the severity of winter comes on it is well to confine them here until they have had their morning feed.

HOGS.

The stock hogs should be sufficiently fed with grain to keep them in good order, and should have dry beds and comfortable shelter apart from other stock. Especially keep them away from heaps of manure, which give them cough and disease of the skin if they sleep in them.

CORN CROP.

The crop of corn should be got into the cribs as early as it can be done, and the shucks put away for the use of working oxen or other cattle. It is a matter of convenience and very consistent with prudent management, to measure the corn with care as it goes into the crib and keep account of what comes out.

TOBACCO.

The preparation of the crop for market will be now begun and carried forward as the weather allows. Press of other work often leads the planter to postpone stripping until a later period, and with a full crop this results in throwing too much of the work into the spring, and interference with the important work of that season.

Look well to the proper assortment of qualities, and see that neatness is observed both in tying and handling, that the bulks are laid well and the stalks thrown well up into a corner of the house, and not thrown out into the rain.

MANURES.

Use now and at all times such material as can be commanded, in making compost heaps for necessary purposes. Be sure, especially, that there be abundant coarse matter to mingle with the manures of every description.

PLOUGHING.

Take any opportunity that may offer to plough such land as will profit by exposure to frost, as clay and old sward. All such work done now puts forward the spring work

in this important particular, and in wet springs, as the two just past, may expedite very much the planting of the crops.

FENCING AND GATES.

Get together, as opportunity offers, material for fences and gates, to be got in readiness for use during the winter. Put a good gate wherever needed.

CURING MEAT.

As this is the season of hog-killing and of putting up other meats for future use, the following recipe will be found convenient to such as have not a suitable one on hand. It is of the best quality:

To 1000 pounds of meat put three pecks of fine Liverpool salt and four pounds of salt-petre. Put neither pepper, sugar nor molasses with the foregoing. Pack in a cask, the bottom of which must be perforated with holes, to allow the drip of bloody water to pass off. Let it remain three weeks, and then smoke every morning with green hickory wood, having the fire as far away from the meat as practicable, so that the smoke may cool before reaching it.

Another recipe, perhaps equally good, prescribes 8 pounds of salt, 2 ounces of saltpetre, 1½ ounces of potash, 2 pounds of brown sugar, or 1 quart of molasses, and 1 ounce of red pepper, to be dissolved in 5 gallons of water for every 100 pounds of meat.

The Vegetable Garden.

DECEMBER.

There is little to be done in the garden now, but to finish up such work as has been heretofore suggested.

Plants in Frames.—About midday of all fine days raise the sashes to give air to the plants, close before night, and in severe weather cover with mats.

Beds of Stiff Clay.—Dig these as opportunity offers for exposure to the action of frost.

Manures.—Well prepared composts being of especial value for many spring crops, the sooner they are prepared the better, as they improve with age.

Newly Planted Trees and Shrubs.—Protect the roots of these by throwing around them coarse litter, not thick enough, however, to harbor mice, or what is better, perhaps, by

banking up the earth around them, to be removed in spring.

Plants not strictly hardy may be protected by wrapping their stems with straw or matting, that will intercept the sun's rays, and prevent alternate freezing and thawing.

Other Work.—Carry manure on ground where it may be needed during freezing weather; gather all litter and trash; put away all sticks and poles that may be used another season, and get new ones from the woods for the coming season.

The Fruit Garden.

Pears, apples, gooseberries, currants, and all the hardier fruits, may be pruned during the winter months; peaches and other stone fruits should be deferred till towards spring. Rub and scrape off moss from trees, and wash with lye or soap and water.

The Roots of Plants.

In his work entitled "How Crops Grow," S. W. Johnson says:

The quantity of roots actually attached to any plant is usually far greater than can be estimated by roughly lifting them from the soil. To extricate the roots of wheat or clover, for example, from the earth, completely, is a matter of no little difficulty. Schubart has made the most satisfactory observations we possess on the roots of several important crops, growing in the field. He separated them from the soil by the following expedient. An excavation was made in the field to the depth of six feet, and a stream of water was directed against the vertical wall of soil until it was washed away, so that the roots of the plants growing in it were laid bare. The roots thus exposed in a field of rye, in one of beans, and in a bed of garden peas, presented the appearance of a mat, or felt of white fibres, to a depth of about four feet from the surface of the ground.

The roots of winter wheat he observed as deep as seven feet, in a light subsoil, forty-seven days after sowing. The depth of the roots of winter wheat, winter rye, and winter clover, as well as of clover was three to four feet. The roots of clover one year old, were three and a half feet long; those of two years old clover were but four inches longer. The

quantity of roots per cent. of the entire plant in the dry state was found: Winter wheat, examined the last day of April, 40 per cent.; winter wheat, May, 22 per cent.; winter rye examined last day of April, 34 per cent.; peas examined at the time of blossom, 24 per cent. Hellriegel carefully examined the radication of barley and oats, and, for this purpose, raised plants in large glass pots and separated their roots from the soil by careful washing with water. He observed that directly from the base of the stem, twenty to thirty roots branch off sideways and downward.

These roots at their point of issue have a diameter of 1-25 of an inch, but a little lower the diameter diminishes to about 1-100 of an inch. Retaining this diameter, they pass downward, dividing and branching to a certain depth. From these main roots branch out innumerable side roots, which branch again and so on, filling every crevice and pore of the soil. To ascertain the total length of root he weighed and ascertained the length of selected average proportions. Weighing then the entire root system, he calculated the entire length. He estimated the length of the roots of a vigorous barley-plant, at 128 feet, and that of an oat plant at 150 feet. He found a small bulk of good fine soil sufficed for this development—1-40 cubic foot answered for a barley plant, 1-32 cubic foot for an oat plant. In these experiments Hellriegel observed also that the quality of the soil influenced the development. In rich porous garden soil, a barley plant produced 128 feet of roots: but in a coarse-grained compacted soil, a similar plant had but 80 feet of roots.

BLACK INK FROM ELDER BERRIES.—The bruised berries are placed in an earthen vessel and kept in a warm place for three days, then pressed out and filtered. The filtered juice is of such an intense dark color that it takes 200 parts of water to reduce it to the shade of dark red wine. Add to 12½ quarts of this filtered juice 1 oz. of sulphate of iron and the same quantity of crude of pyroligneous acid; and an ink is prepared which, when first used, has a violet color, but when dry is indigo-blue black. This is superior in many respects to that prepared with galls; it does not become thick so soon, it flows easier from the pen without gumming, and, in writing, the letters do not run into one another.—*Deutsche Ind. Zeitung.*

For the "American Farmer."

Silk Culture.

(Continued from the September number.)

SECOND PERIOD.—The duration is four days. At this period they occupy a considerably larger space. Temperature 18°–19° Raumer. After the casting of their skin, fresh air is as essential as food and moderate warmth, and no food has to be given, even for as long as 36 hours, until all worms have awaked.—From now the most rigid attention has to be paid to their cleaning, as well as to cleanliness of the whole room. If sick worms are noticed, which can be detected by the change of color, they must instantly be removed to prevent contagion. If it is apparent that all the worms have awoke, and they stretch their heads as if in search of food, then is the time to enlarge their space. To effect this, small twigs of mulberries are spread over the worms, on which the worms will instantly crawl. The twigs, with the worms on, are placed on boards, which are carried to the hurdles intended for them, and there placed in rows. After this has been done, the feeding takes place.

First day.—Two pound and a half of fine mulberry twigs and as much fine chopped leaves. This is given to them in three meals, of which the first, consisting of eight ounces, must be the smallest.

Second day requires seven pounds of well cleaned and fine cut leaves.

Third day.—Eight pounds of leaves, prepared like the day before, are required. The first meal must be the heaviest, as the worms commence to lose their appetite towards the evening, on account of their going to cast their skin.

Fourth day.—Only eight and one-quarter pounds of leaves are needed, as the worms go to sleep in the course of the day. It is desirable at this period to change the air more than generally. Temperature 18°–19° R. must be restored by lighting fires.

THIRD PERIOD.—Five days. Temperature 18°–20° R.

First day.—Three and one-half pounds of leaves and as many twigs; leaves not so fine chopped.

Second day.—Fourteen pounds of leaves, increasing meals.

Third day.—Twenty-three pounds of leaves—first meal the largest.

Fourth day.—Thirteen pounds of leaves.

Fifth day.—Seven pounds of leaves.

FOURTH PERIOD.—Six days. Temperature 18° R.

First day.—Nine and one-half pounds of leaves, coarse cut, and as many twigs.

Second day.—Forty pounds of leaves, prepared as day before. Increase meals.

Third day.—Fifty-three pounds of leaves, prepared as day before.

Fourth day.—Sixty pounds whole leaves, meals decreasing.

Fifth day.—Thirty pounds of leaves.

Sixth day.—Seven pounds of leaves.

FIFTH PERIOD.—Ten days. Temperature 17° R.

First day.—Eleven pounds twigs and eleven pounds whole leaves, in two meals.

Second day.—Sixty-eight pounds, increase meals.

Third day.—Sixty-nine pounds, increase meals.

Fourth day.—One hundred and thirty-two pounds. First meal, twenty-eight pounds; second meal, thirty pounds; third meal, thirty-six pounds; fourth meal, thirty-eight pounds; fifth meal, forty-nine pounds.

Fifth day.—One hundred and eighty-six pounds, fed like the day before.

Sixth day.—Two hundred and twenty-four pounds, meals increased.

Seventh day.—Two hundred and forty pounds, meals decreased.

Eighth day.—One hundred and fifty pounds, the meals decreased; first meal, forty-eight pounds.

Ninth day.—One hundred and thirty-two pounds.

Tenth day.—Fifty-seven pounds.

When the time arrives that the worms want to spin, they refuse to eat and commence moving about on the hurdle. Their body has become half transparent and soft. The rings on their body contract and the skin on their neck gets very wrinkled. If the hurdles where the worms have been fed are provided with small harbors of fine brush, they will ascend by themselves, but many silk-growers prefer to have the spinning hurdles by themselves. To remove the worms to these, they are brought here on paper. When the worms have done spinning, which is the case if the worms lay loose in the cocoon when shaken, the cocoons are taken out and freed from the loose silk found on the outside. This must be done three or four days after they have

done spinning, and the cocoons be disposed of to the spinners. If more than two weeks elapse after they have finished spinning, before they are killed, there is danger that the butterfly will eat through the cocoon, which would ruin them. The killing of the worms in the cocoon is best done by placing the cocoons in a moderately heated bake-oven. If the silk is raised for our own use, the detaching of the silk from the cocoon is done as follows: A large boiler is filled with water, which is heated. In this the cocoons are thrown and beaten with a bundle of twigs, to which the ends of the silk-thread of each cocoon will adhere. These ends are taken hold of with the hand and attached to the reel. On turning the reel, the silk-thread will detach itself from the cocoon. Care has to be taken that if any of the threads break, the reel is stopped and the broken thread attached again.

L. A. HANSEN.

A Talk With My Grapevines.

Editors Country Gentleman: This fall three years ago I planted about half an acre in Concord grapes. The ground was a clay loam, upon an elevated plateau. The holes for the reception of the plants were dug deep and large, and were well supplied with well-rotted stable manure, which was thoroughly mixed with the soil. The next season was good, and the vines grew well, and so did the weeds; and for want of the proper attention at the proper time, the plants were completely overrun, and it was with great difficulty they were got but tolerably clean by the close of the season. The next summer they again grew very luxuriantly, but were again neglected and smothered with weeds. They were once more cleaned but partially. At the commencement of the past season they were properly worked, and they grew off and gave an abundance of bloom, and set their fruit beautifully.

Having other matters requiring my attention, I was again obliged to neglect them, and my visits to my little vineyard were few and far between. A few days ago, however, I thought I would pay my neglected pews a visit, thinking it about time the few I expected to find were about ripening. Imagine my surprise and my delight—aye, and my shame and mortification too—at finding them bending under a load of the most beautiful, large and luscious grapes that my eyes ever beheld. I

could scarcely believe my eyes. Could it be possible that these faithful vines could give me such a crop in return for *such* treatment as I had given them? When I went in among them I could almost see joy in the fluttering of their leaves—they were so pleased to see me after so long an absence—and I could hear them say as plain as grapevines could speak, “Master, we are glad to see you; accept our offering; it is the best we could do under the circumstances; the season has been bad, and the weeds have robbed us of much of the nourishment which rightly belonged to us; but we have worked hard, elaborated as much of the fruit-producing juices as we could get, and we hope you will not complain of our unproductiveness.” Need I say that such an address as this made the blood tingle in my veins, and brought the blush of shame to my cheeks? Yes, it did; and my reply in audible language (literally) was this: “Well, my dear shamefully neglected dears, I confess my neglect; I own how badly I have treated you; I have no excuse to make; I do not deserve a single bunch at your hands. But you have repaid unkindness with good, you have gladdened my heart and worked for my gratification while I was thoughtless of you. I confess it all, and humbly ask to be pardoned for former neglect, with the assurance that in future, while I live, it shall never be the case again.” I could almost hear them, with one accord, say: “Master, we are satisfied; only keep these nasty weeds from robbing us of the food which you provide for us, and we will go on to increase our product, and you shall never have cause to complain of the quantity or quality of the fruit which we will give you.”

But, dropping allegory, let me speak of the Concord grape. I have the Delaware in all its perfection, and a perfect grape it is. I have also the Rogers' 15, a noble fruit indeed; also the Clinton, with its small but solid bunches. But the Concord—such bunches, such berries, such clusters, crowding each other and bending the vines with their weight, (and this in spite of shameful neglect), I have never seen; and I only wish, Messrs. Editors, that our old friend and philosopher Greeley, who could so well appreciate the sight, could but see them. There is certainly no grape, take it all in all, that can equal it; and for productiveness under bad treatment, and all other qualities, it is and must continue to be the great grape of this country.—*Cor. Country Gent.*

Address of Col. W. W. Bowie

BEFORE THE STATE AGRICULTURAL SOCIETY.

We should take pleasure in giving this able address in full, if our pages were not so limited as to require us to sacrifice the ornamental to the useful in this as in many other cases. Readers would miss at any rate the manly form, the graceful action, and the rich and flexible tones, with which the orator enforced his utterances. So we must make free, too, to omit the rhetoric, while we give the practical, and therefore, for our readers, the most pertinent portions of the address.

We select those portions in which, after an eloquent tribute to the usefulness of the old State Society, he lays down what he calls sound elementary rules in good husbandry, and goes on to make practical suggestions as to the influence farmers might bring to bear on the legislation of the State, and in what direction it should be used:

"The rudiments of good husbandry are,

1. Clean and deep culture, with thorough pulverization.

2. Effectual draining by open ditches and underdraining with tiles—that being every way the easiest, quickest, most effectual, and beyond doubt the cheapest and most economical under any circumstances.

3. Pulverizing stiff and compacting light soils.

4. Free use of lime and the phosphates, with heavy manuring, in connection with as much shade as can be given the land by coarse manure, straw, brush, leaves, or, if possible, grasses. There are several ingenious and beautiful theories as to the *modus operandi* of fertility being imparted to the soil by the action of *shade* alone, but I shall not detain you by repeating the arguments in their support. Upon this and kindred branches of agricultural philosophy, Mr. Clemson has written eloquently and with great ingenuity and power.*

5. Thick sowing of mixed grasses when the land is seeded to lie in grass for forage or pasture.

6. Top-dressing grass instead of turning under manure for crops. Home-made, long manure here referred to.

7. Bones, next to lime, is the most durable and economical of all fertilizers, and hence the most remunerative.

8. *Judicious Rotation of Crops.*—In this mat-

ter every man must be guided by* circumstances and his necessities and means; but, as a general rule, we do not *rotate* enough, or let land lie long enough in grass, by which three things might be attained—more stock, surer success in clover, and increased crops, with less *hard* labor, although we would have *more* light work. Cattle and grass I hold to be the cheapest and most permanent of all fertilizers. Outlay is necessary, but home production of fertilizing materials should not be neglected merely because foreign or domestic manufactured fertilizers are more easily applied and are easily obtained. It is good and judicious farming to expend in bought fertilizers at least four per cent. on the whole cash value of the farm, per annum, besides top-dressing at least one-fifth of the arable land with a heavy dressing of such manure, straw, chaff, leaves, weeds, muck, clay, &c., as can be furnished by the farm itself. He who can pursue this course will in five years be paid well for his outlay and have his land wonderfully improved in fertility. It should always be remembered, to have manure, there must be cattle, and to have cattle there must be grass.

Having acquired these rudiments under the genial influences of the old Society, we are prepared to enter the high school, which we hope to see the present Association become. In its aims and objects we trust it will look to things higher and nobler; ends and purposes greater, deeper and loftier.

In our elementary education we bought our experience with labor, trouble, and oft-times at heavy cost in unsuccessful experiments. But we bought not in vain if those to follow after us shall be profited. Our young men at twenty stand where we do at forty years of age, and they reap the benefit of our twenty years of time, toil, thought and money. We have cleared the forest, mapped the lands, profiled the fields of operations, and written full instructions so no time may be lost or unnecessary expenses incurred. The young man who starts to-day with \$5000 is in a safer way of making a fortune than he with \$20,000 did before this work of progress began and those principles had been settled. Instead of a few poorly supported papers devoted to the cause, we now support hundreds of agricultural journals, 1500 or 2000 State and County Societies, including farmers' clubs, horticultural associations, and the great National Horticultural Society. In addition to these important aids

*In the pages of the American Farmer.—Ed

to the progress of agriculture, we have, at least, under the fostering care of Congress, that "Department" which the Father of his Country so urgently recommended, and which, for the first time, is conducted upon a well-arranged and devised system, adopted by Gen. Capron, the present accomplished and able Commissioner, that inevitably will eventuate in developing the resources of the nation and add to its wealth by facilitating the progress of this noble employment.

From these comparatively small matters, such as encouraging a spirit of improvement in the rearing of stock, in horticultural knowledge, in domestic manufactures, in increasing the stores of vegetables, and in fertilizing and beautifying the land, all which will be fully attained by the annual exhibitions of the Society, we should and *must* rise to greater affairs, to a more elevated work.

We seem to be as ignorant of the *power* we hold, and the deep interest we possess as were the Roman cultivators of the soil when Virgil exclaimed,

"O fortunatos, nimium sua si bona norint agricolas!"

The wise men of every government have coincided with the Great Napoleon, that "agriculture was the wealth of the nation."—Washington pronounced it the most healthful, the most useful, and the most noble employment of man. The statistics of the country show the magnitude of the agricultural interest as compared with other business occupation of life, not only as to the number of persons employed, but the amount of capital invested. It is to this pursuit the wisest and best of mankind and the most brilliant minds of all the professions have turned to seek that quiet repose it affords to all such as cease their perplexing and vacillating round of excitements ere the twilight hours of life foreshadow its eternal night. Its pleasures are sung by poets; it is the theme on which orators, statesmen and warriors are prone to dwell, the hobby-horse that politicians ride, the delight of the retired wealthy merchant, the favorite occupation of the mass of labor, the solid rock on which rest all other industrial pursuits, and to which every class of people look for the sustenance of life. Yet, notwithstanding all these admitted prerogative rights and claims to the highest consideration, it has less attention paid to its necessities and less interest manifested in aiding its

progress than any other avocation. It would seem the legislative councils of the country prefer to see it out in the cold, while the Constitution is made to throw its protecting arms over every other department of human labor and extend its fostering care to every other branch of industry and enterprise. This may be owing to the fact that agriculturists have not been awake to their own true condition—they have never fully realized their wrongs nor calculated their *power*. Your Society can, and I trust will, by its great influence, procure for this important interest more consideration than has heretofore been bestowed by our public functionaries.

Do not, sir, for a moment believe I would have this Society converted to a political arena. Partisan politics, I trust, will never enter here. Every true agriculturist should be above such petty strife for place and power; but if we desire to elevate our profession and advance its importance and prosperity, we must more closely study and become more familiar with certain branches of political economy. Permit me to name a few of those subjects which would seem to be peculiarly proper for discussion at your meetings:

First. *Public Education*—because an enlightened yeomanry is the best and only safeguard of the civil and religious liberty of a nation and of the personal comfort, happiness and security of its people.

Second. *Public Roads*—about which there is a great contrariety of opinion in all the counties of the State, but, I believe, all agree that a good and economical *road system* would be a blessing to the whole people, of incalculable benefit to the farmer, raise the price of lands and add immensely to the general wealth of the State. *Taxation*, local, State and national, is surely a legitimate subject for comparing views and settling upon a plan to be urged with united hearts and minds upon the proper authorities, that those burthens might be ameliorated or removed, or so adjusted as that equal justice be meted out to all. This can be done without descending to party politics, and properly belongs to the farming population; for, as all other interests depend upon agriculture, the tillers of the soil, either directly or indirectly, bear the whole burthen of taxation in the country. The merchants, the manufacturers, and all the different trades, where enterprise and intelligence are found, combine and exert their

influence and power to have laws passed for the benefit of their pursuit, or unite to have repealed any law they find oppressive to their interest, and why should not the owners of the land, the workers of the soil, follow the example? If they deem it oppressive, that the hard earnings of their brows can be sold only for a depreciated currency, and that small sum heavily taxed to pay gold interest on bonds which pay no tax, can they not, or rather, should they not combine, and by concert of action throughout the whole land, respectfully set forth their grievance and firmly demand some redress? But, I fear, sir, they know not their rights any more than in the olden-time of Virgil, or surely, knowing them, and aware of their strength, they would "*dare maintain them.*"

Fourth. *Internal Improvements*—such as canals and railroads; they being of vital importance to the farming interest, as means of rapid transportation of the products of the soil to the different marts, and which so greatly enhance the value of property in the vicinity of which they pass and so largely increase the material wealth of the State, are objects on which farmers can never look without feeling the keenest interest, and I am sure will never cease to aid to the utmost of their power every such enterprise until every section shall be alike benefited by these great public conveniences and our State map present the outline or draught of "*the best machine for cooking beef-steaks.*"

There are other subjects of moment, such as weighing and measuring different products, inspections, the tariff of charges to which producers are subjected, inspection of fertilizers, impositions to which the farmer is often subjected, and other kindred subjects.

I am fully aware that the time of each member of your Society is too much taken up at your annual meetings for the consideration of any one of these questions, but committees on one or more of them might be appointed to report at a quarterly or semi-annual meeting, where all who felt an interest in the subject could attend and be benefited by the interchange of sentiments. The reports would then be adopted, amended or rejected. These reports would be published in the volume of annual transactions, as it is in New York, and would no doubt be highly creditable to the Society and much prized by the public. The State, in all probability, would subscribe for

as many copies as would pay for the printing and binding."

Feeding Rack for Sheep.

A rack or feeding box of convenient size for use and for moving, may be made as follows: For the posts, take pieces of any good hard wood, 2 by 2½ inches, six in number; one for each corner and for the middle of the sides. For siding and ends, take boards twelve feet in length, twelve inches wide for the bottom, and eight inches for the top.—This will give you an opening of ten inches for the heads of the sheep, if the posts are thirty inches in length. But they can readily be made a little longer or shorter, according to the size of the sheep you wish to keep. For the bottom, take three narrow strips of board, one at each end and one in the middle. Upon these fasten a board, twelve inches wide, running lengthwise through the middle. This is for the bottom of the trough. Upon each side of this, put in a board upon a bevel, extending to the sides of the box. This will make the bottom dishing at the sides, and tight for holding grain, meal, roots, or any thing else you wish to give them. This box may be made with wooden pins, or nails, but the best fastening is stout screws, about two and a half inches in length. In the moving about, the boxes are subject to a considerable strain, and screws will be found the cheapest in the end. Such a box as this will accommodate about twenty large sheep. It is easily turned over and cleaned without sweeping, and readily put away for the summer. This kind of feeding apparatus has been in use in this country for at least forty years, and is on the whole, the handiest contrivance we have met with. It will pay a man who keeps sheep to have enough of these made to accommodate his whole flock. In the common slovenly way of feeding upon the ground, much more fodder will be wasted. In the change of the flock from the pasture to the yards, care should be taken not to over-feed them with grain at first. The quantity of meal, grain or oil-cake, may be gradually increased from a handful up to a pound for each sheep daily, beyond which quantity it is not ordinarily profitable or safe to go. Too high feeding with meal or oily food sometimes leads to sudden death, and the butcher loses his mutton and you lose your profits.—*Stock Jour.*

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Establishing Grass Lands.

There is much difficulty in getting a coat of grass upon our dry upland soils, especially in establishing a sod; but it may be done, and successfully. It needs of course a mellow soil deep down. Where the soil is not naturally drained—as often in drift—it needs ditching. This mellows from below and gives an opening for moisture, the great requisite for grass.

To stock the land we should begin with clover. This will enrich the lower soil as well as the top, and with the right kind of pabulum; it will also loosen the ground—two important points in pastures and meadows, as the land, lying many years without cultivation, needs all the mellowness it can get; and as it can only get it in the start, this should be attended to. Clover is an aid in this respect; some one or more of the grasses being sown with it, these will take the place of the clover—orchard grass probably being the best, all things considered. It will penetrate its roots somewhat like the clover, and form a dense sod at the top, and it will make a permanent thing if any grass will. It but needs aid, and this must be given it; for it must be laid down as a rule—as an axiom in farming—that, to establish a sod on light dry land, constant attention is necessary.

This may not look encouraging, but it need not be discouraging; for whatever labor is bestowed, judiciously, will reward—pay a nice percentage of profit. And this is what we expect of farming—a good reasonable profit, and labor to secure it. It is true there is less labor in the land more naturally adapted to grass. The discriminating farmer will avail himself of this. But all lands have not this advantage; there are farms that have little or none of it. Besides, we want to practice rotation, and bring some of our land, less capable of growing grasses, into sod. Where manure cannot well be applied, as in places difficult of access, clover and turf must be relied upon. We therefore find use for grass in these lands ranging from a light, dry, sterile mud, to a cold, heavy clay. There is much such land, and it is of little benefit unless put to grass. Grass is a means of improvement as well as a profit.

What then are we to do? We have already indicated that the soil must be mellowed and enriched; that ditching and clover are the means, to follow with sod; and orchard grass

or cock's foot, (*Dactylis glomerata*) should be one of the principal grasses, though it is seldom used in this country. But whether cock's foot or timothy or June grass, or any other of the gramina, let one or more of them be used with the clover. Neither of the grasses proper is especially adapted to dry, light soil; the clovers will do better here, and they are therefore used so long as they will keep a footing, which is two or three years, and slightly more, sufficient, however, to be of some benefit. In low moist land this is not the case; clover will disappear generally the third year. Clover then will do for a start where the land has sufficient fertility or adaptability to grow it. If not, other means must be employed, which we shall advert to.

And now, the clover having made a start, the grasses taken hold, we are to rely upon surface applications. And the greater art we bestow upon this the more successful we shall be, and it requires much knowledge and a close discrimination. It is a delicate operation, especially in view of the drouth which is apt to occur, and which, if severe, will seriously embarrass our efforts, irrigation being almost the only available means left us, and this is unpromising in view of the difficulty of applying it. Leaving that, perhaps the most effectual thing of all, out of the question, we must apply ourselves to other treatment of the surface.

There must the food be given to the plants which the soil lacks. This has in part been applied by the clover, and is still doing something. This clover must be encouraged as much as possible, what remains, and it need not be told here that plaster is the main reliance. But this will benefit the whole crop, and must not be dispensed with; on dry land it is more particularly efficacious, and in a drouth most of all. Let this be sown at the rate of a bushel or a bushel and a peck per acre, applied every other year, or, if less is used, applied yearly. Sow in May when the grass starts, or later. When the ground is green with the blades, and the dew is on, sprinkle over so that the dust adheres to the blades and thus attracts moisture and strength directly to the plant and also arrests what the ground may discharge, and is a fertilizer besides. At least to sow on the dewed stalk is a good plan, especially if plaster has been previously sown, so that its effect is still there on the soil or in the ground. This will still have its effect

there; and that sown on the stalk will influence the stalk where applied. We know of no better way of applying this cheap and ready fertilizer.

Next, and best of all, comes the manure from the stables. This should be used if possible. Without it, it is difficult to establish a good sod. Draw as the manure is made and apply. This may be done with the sleigh when no other work is to be done. A sleigh is accessible to almost any part of the farm—certainly any tillable part, and with a decent load. No unnecessary moisture—rain water—will be carried; only the urine and excrements, all valuable, will be carried. And it needs little change; that is readily accomplished by the early warmth of the spring, so that at the starting of the grass there will be an effect, the manure aiding the start.

Scatter or not when drawn. If left in heaps, in the spring early scatter. Do it as soon as the frost will permit. But this frost in the heaps will teach us a lesson. It will teach us to spread in the winter from the sleigh, so as to get the early benefit of the rains and the attraction of the sun, the dark manure absorbing the rays.

This coat of manure fresh and strong will have an effect that is surprising, and it will last. But part will be issued as plant-food at first; the rest as it becomes fitted, decomposed. Thus the whole season will get the benefit, and the effect will be seen the year following if a decent coat is applied. But *spread evenly and fine it thoroughly*. Pass a harrow over it and let it work the manure somewhat into the soil and cut up the grass; it will not root it out, but loosen the roots, cultivate the soil. This is to be done early, as early as possible, care being taken particularly not to do it when the ground is wet; let it be sufficiently dry to work. Plaster may be applied immediately after this, or later when the blade takes it.

Generally the manure is preferred to be applied in the fall on grass, and this it need not here be said is a good way, and has been demonstrated as such. There is the advantage of the fall growth, which is of great benefit. Applied early or after the crop is removed, and worked down finely on the ground, there will be a chance for a good growth. The coat also will be a protection against the rays of the sun, and in addition to the grass, a guard against the frost. But this

last is of less consequence, as the dry, drained nature of the soil will prevent much if any evil to the grass. But more of the strength of the soil *seems* to be realized by the winter application, probably in consequence of the undiluted and unescaped strength of the manure. Where thoroughly protected and well-rotted during the summer, nothing can improve the manure, unless it is a still further chance for maturity, as plant-food cannot be too thoroughly prepared.

We speak of the effect of winter application from what some of our best farmers and dairymen have said, and what we have seen and see every day. Not a dozen rods from our door is an example perfect of its kind. A hill rising rather steeply for tillage, composed of light drift soil, and yielding only strawberry vines and weeds, and bare on some spots—an eye-sore to the village, has the past few years been transformed, and is now the greenest and handsomest sight seen in the valley. All that was done to it was to apply manure in the winter and dust a little with plaster after the grass showed. About three cords to the acre was the rate; but it was fresh, clean stable manure, most of it. It was spread in the spring somewhat late, and hence showed a somewhat uneven growth. There was no seed sown. The little grass that spindled and dwindled to nothing in a drouth, now spread and grew rank, as if to make up for lost time. The dormant seeds rose like a host. The first year showed a sod; the next the finest green in the neighborhood, early in the spring and late in the fall and during summer. The weeds were still there and in greater abundance. The white daisy in a moist year rose richly; but so did the grass and a little clover, which now showed itself, both white and red. This was turned down lightly, grain sown, and a fair crop realized. The land was now regularly seeded to clover and timothy and another coat of manure given in the winter. There is nothing better as a meadow now, (and hence for pasture also) than this—not so stout as the richer lowlands, but stout and of better quality, sweet and nutritious, highly relished by stock. For the few years since the seeding, good crops have been realized. There is a good thick coat now, and a permanent look. All that is needed to make it permanent is to continue the treatment already given—plaster used as we have specified, with an occasional coat of manure applied in the

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winter from the stables, or in the fall as compost. The latter is the more expensive mode, but will do in some cases where soil is wanted to be added, as clay on sand, or sandy loam on clay, the manure being carried where the compost is made. Thus a compost of three-quarters clay is excellent to put on dry sandy ridges, making soil and aiding to make the grass permanent.

Sometimes where the grass is backward or fails to fill out to occupy the ground, guano or a preparation of bone may be used with advantage.

But in no case is deep ploughing to be resorted to, unless the land originally good, is exhausted by cropping. Then it is probable the subsoil is good and may be brought up. This should have been done in a gradual way, always ploughing in the fall. If turned up deep it will take years to correct it. But then it will be lasting—lasting as long as before—and in some cases surprisingly productive. This is to be known and advantage taken of. More land is of this nature than farmers are generally aware of; their wealth lies below, and needs but the adjustment of the clevis to bring it up. This alone will give something like permanence to meadows. Aided by the means we have indicated, there will be the best of success.—*Country Gent.*

Improved Stock.

The experience of the few past years has clearly established the fact, that the breeding and keeping of improved stock of all kinds is a sure source of great profit. Years ago, it was, perhaps, natural that men should have been somewhat timid and reluctant to invest large sums in a fine horse, or improved cow or other animal, because the demand for such stock was comparatively limited, and farmers generally could not clearly see how they were to get back the money thus invested. But at this day, when the superiority of the improved breeds over inferior animals has been demonstrated in such an unmistakable manner, and when it is known that fine horses, cattle, sheep, dogs, &c., can also be sold at remunerative prices, the wonder is that any person, so situated as to be able to do better, will remain contented with the runts and scrubs of the past. A horse that will bring but seventy-five dollars is just as expensive to keep as one that will stand as much or more service, and bring readily when offered three hundred dol-

lars. A Devon, Alderney, or Durham cow will give so much more milk, of a richer quality that it is surprising a farmer will keep an inferior cow on his place. So with hogs; it will prove more profitable, certainly, to pay a high price for an improved breed that will take on fat rapidly, than to keep the long gaunt rooters that we sometimes see on the roadside and in the woods, always looking half starved.

This same reasoning will apply to all animals on the farm—the best are the most profitable, and to this assertion the experience of every enterprising farmer in the Union will lend the weight of his confirmation. Liberal, energetic men have derived a greater profit from handling this class of animals than from all other departments of their farm, and if, among our readers, there are young men who think about engaging in farming, we hope they will adopt the policy we have advocated in this article. Let them discard the old time theories and prejudices, and invest their means in improved animals. If your means are limited, be contented at first with a small beginning, and if you devote yourself faithfully to attending to your business, our word for it you will find a greater profit in the year's transactions than you would have derived from handling inferior stock to an extent ten times greater.

This is a progressive age, and every pursuit, every interest, is making rapid advancement, and those who want to succeed must keep up with the times. The demand everywhere now is for fine stock, and a single horse or cow now often sells for as much as a herd would a score of years ago. The sensible farmer will take the lesson these facts teach.—*Farmer's Home Journal.*

GOOD BUTTER.—It is just as easy to make good, sweet, clean butter, as to make poor butter. The best of butter is made from sweet cream, gathered as free from milk as possible. To make good butter requires more than ordinary care and attention. Everything should move on with the regularity of the sun. To make butter profitable, great care must be exercised in milking the cows. To milk clean is important. It not only adds to the quantity of butter, but saves the cow from positive injury. Let a farmer or his dairy get the name of keeping a good article of butter in every respect, and he will find it not only to pay, but pay well, too.—*Ex.*

Ornamental Vines and Shrubbery.

It belongs to our humanity to love fruits and flowers and all green things, and the more people are shut up in cities the greater is the craving for some hint of the country, which often takes shape in a poor little pot or two of flowers in the window, among those whose means are limited, and expands, with increase of means, to the green-house and conservatory of the rich. Fruits of every sort are, as a general thing, entirely out of the question, except as they can be bought in the market at extravagant prices, and yet nothing can be more grateful to people shut up in the city than a few bunches of good grapes daily through two or three weeks of the summer season.

We make these remarks introductory to a practical suggestion, which a large number of city people might avail themselves of if they would. Grapevines growing low in city yards are in the way, likely to attract pillaging boys, get covered with dust, and are objectionable in many respects; but it does not seem to be known, or to have occurred to many, that a vine may be carried in a single stem to any desired height, and made to branch out there and bear its fruit just where it may be wanted.

Who has not seen the wild grape, with a great cable-like stem, hanging about the trunk of a tree at the height of forty and fifty feet, and then spreading out its branches and hanging its rich clusters of fruit among the topmost boughs. We often wondered, as a child, how a single stem could climb so high without help; but however that might be, there is no difficulty, when a helping hand takes hold, in carrying it to any height and getting from it there, besides a rich ornamental effect, an abundant annual supply of wholesome fruit.

This idea is suggested by an article in the *American Builder* on the use of vines for ornament and use, in which we find the following illustration of what we have here suggested:

"At the corner of Eighth and Pine streets, in Philadelphia, is a four-story brick house, having a very small yard in the rear, which is entirely paved with brick, except a space of a foot square in the corner, where the lot is joined to the main building. Here a grapevine starts from the ground, and has been trained in a single stem to the roof of the house. It ascends like a lightning-rod, or rather like a cable, sixty-four feet, without a branch, and

on the roof of the house it forms an arbor, where, safe from thieves and dust, it annually ripens a rich crop of fruit, besides furnishing to its owner a little rural retreat in the heart of the city. There is no imaginable reason why any man who owns a city house should not connect this luxury with it. A space of a foot square is enough to plant the vine in, and its roots will then take care of themselves. If trained in a single stem it will make fifteen or twenty feet of sound wood in a season, and when it has once reached the roof, the abundance of sunshine will ensure its health and vigor."

ORNAMENTAL VINES.

The *Builder* gives also some excellent suggestions as to the use of ornamental vines, which it is said are to be strongly commended as at all times desirable as the readiest possible aid in securing the expression which is needed, especially for a new place not yet provided with trees: "No more graceful or beautiful decoration can be given to an architectural design, whatever may be its intrinsic elegance, than by wreathing it with vines, and suffering its outlines and ornaments to be seen through the delicate foliage and brilliant flowers which serve to soften down the angular formality of mere stone or brick."

Of the vines adapted to such use the wistaria, trumpet creeper and American ivy are recommended. The wistaria is a perfectly hardy vine, and grows with rapidity after getting well started in a rich soil. Its foliage is delicate and beautiful, and its flowers hang in rich purple clusters like grapes. It blossoms twice in a season, and in great profusion. "A magnificent specimen of this vine," says the same writer, "may be seen at the corner of Second avenue and Seventh street, New York. It is planted at one end of a large brick house which forms the corner, and not only covers the whole of the end of Seventh street, but the whole front on Second avenue, and forms an arbor over the yard in front which is fifteen feet wide. It is trained gracefully, and with a care which shows the owner's appreciation of its value, and when in bloom, it is such an object of attractive beauty as to excite the wonder and admiration of every passer."

The trumpet creeper is much like the wistaria in its general character, but has crimson trumpet-shaped flowers, three or four inches in length, which gives a very gorgeous look.

and if mingled with those of the wistaria, by planting the two vines so that they may twist and twine together, the effect is very fine.

The American ivy, known also as the Virginia creeper, has a very beautiful foliage, the leaves growing five together from a single stem. It is a very rapid climber, running ten or twelve feet in a season, if planted in rich soils, and sending off long branches, which sway gracefully in the breeze, or attach themselves to adjacent points and form rich festoons. "The appearance of the vine throughout the summer is beautiful, and in the autumn its foliage assumes the most brilliant hues, as if to make its exit in a blaze of glory."

VINES AND SHRUBBERY.

The use of vines and shrubbery are especially recommended about a new house in the country, which may be, as is often unfortunately the case, destitute of trees. Young trees, says the Builder, aid to a certain extent to keep up the idea of newness, because, knowing the size they will naturally attain, we involuntarily think of what their effect will be, rather than what it is. The most imposing architectural design is of necessity cheerless, if not forbidding, if not in some manner connected with the ground by the use of some natural objects which will harmonize with its prominent features and give them the softened aspect which is essential to the full development of their intrinsic elegance. On the other hand, the plainest and most simple abode may be made to assume a character of comfort and refinement which will arrest the eye and convey the feeling that it represents characteristics which it is most desirable to secure in a home.

In the absence of trees, vines properly supported and shrubbery, which in a short time come to perfection, produce the best effect. Evergreens, it is remarked, are commonly used as shrubbery; that is, they are planted where it is desirable to clothe a bare place, and are often put close to buildings, paths or roads, and almost in contact with each other, as if they were never to attain the dimensions of a tree. The consequence is that before they are half-grown they are in the way, crowding into windows, obstructing paths, or injuring each other, and yet too beautiful in themselves—if they were only in the right place—to be sacrificed. For this reason trees should only be planted where they are to remain perma-

nently. Evergreens, especially, should have their positions selected with great care, for the beauty of an evergreen consists in its being a mass of foliage. If they are planted too thickly, as is almost invariably the case, not one man in fifty has the heart to thin them out when they require it. But if trees are planted only where they are to remain, they will make no show at all, and the place will have a bare, cheerless look for years.

This may be relieved by planting groups of shrubs about the trees, which, in about two or three years will attain their full size, and give a cheerful, pleasant aspect which it could hardly attain by the trees alone in twenty years. Shrubs, moreover, may be easily removed whenever it becomes desirable from their being too much crowded.

The varieties most desirable for common use are syringas, weigalias, pyrus japonicas, Tartarean honey-suckle, spiræas and lilacs.

The value of these suggestions will be appreciated when we consider the great difficulty of getting locations for new houses which have any growth of trees that will answer the purposes of ornament; and they are alike applicable to a great many country places which are not new, and yet are destitute of any ornamental planting.—*Baltimore Weekly Sun.*

Tethering Out Cattle.

It is sometimes desirable to give a few animals of the farm a little better chance at grass than they can get in the pasture, without running at large over the mowing; or we wish to finish up fattening a steer or two on grass, before it is time to put up the stock in winter quarters. This can frequently be better accomplished by tethering out on the aftermath of the mowing field; although we may deprecate the practice of feeding off the aftermath, it may be done to a limited extent without detriment, provided we make a suitable return therefor, and a considerable gain be made frequently.

Some may object to tethering cattle from the apprehended danger of accidents, &c.; but there is very little danger after a few days at first, if properly tethered. Cattle will gain much faster in flesh when tethered and water given them regularly at stated intervals, than if allowed to range at large over the same feed; for they spend their time in feeding and

ruminating, instead of running to find the best feed.

Different ways of fastening cattle to the tether are practiced, but as good a way as I have ever noticed practiced is to fasten horned cattle by one horn, at the tip, and after a day or two they will generally manage themselves perfectly, and no danger of their getting injured unless some mischievous dog or other ill cur comes to annoy or frighten them.

Cattle should always be tethered with a chain for the purpose, for a chain will always free itself and lies close to the ground, whereas the same is not the case with the rope; besides the rope, when wet or damp, twists and knots, often causing trouble thereby, while the chain keeps straight.

First procure a suitable small chain (can be had at the hardware stores generally,) with a swivel and ring at each end—one ring large enough to go over a tethering pin two inches in diameter, and the other of size to buckle a short one-inch leather strap through, to attach to the horn of the animal. Procure a piece of an old tug strap from a harness, three or four inches long, and make a hole large enough through one end to let the inch strap through; in the other make a smooth round hole, sufficiently large to slip on to the tip of the horn and turn. Remove the button or knob from the tip of the horn, and slip on this leather piece and replace the button above, and the piece is held in place and will turn as necessary, when the animal moves or turns around, &c.

Make a tethering pin for attaching the end of the chain to, of good, sound white oak or other hardwood, eighteen to twenty inches long, with a smooth, round-headed knob to hold the ring on, and the lower end sharpened for driving into the ground. Drive this pin through the ring its whole length into the ground, and attach the other by the short strap to the piece on the horn, and all is ready.

The tethering ground should be free of trees where the chain will get wound around, &c., and the animals should be under the eye for a few days at first, till they become accustomed to their being tethered; the tethering pin should be moved a short distance two or three times a day as occasion requires, and the cattle watered regularly twice a day.

I have practiced this mode, and seen it practiced by others many years, and have never known any serious accident to result

to any animal so tethered, though frequently half a mile away, and only looked after to water and move on to new feed, &c.—*Country Gentleman.*

The Study of Old Fields.

BY DANIEL LEE.

All our fields, not less than our children and ourselves, grow old with increasing years. They differ, however, widely from persons and all organized beings, in the facility with which they may be rejuvenated. The life of man, when consumed, can no more be restored to him than light may be obtained from a candle that is burnt out. Human life is handed down indefinitely, from one generation to another, by the force of natural law, which appears to ordain the perpetual increase of our species on a limited area of ground, for the production of human food and raiment. Hence, it is only a question of time, when population shall press severely on all arable land for the means of subsistence.—America presents so many advantages for the rapid multiplication of mankind, that the growth of the genus *Homo* in Europe, Asia and Africa, is no just rule by which to calculate our future expansion on this Continent.

We are educating young farmers, whose business it will be to raise from a long-cultivated soil, a plenty to feed and clothe one hundred million people. How shall they do this on land that their fathers and grandfathers have depleted and impoverished? Now, we can rest our worn-out fields, and let nature slowly recuperate them, as there is fresh land sufficient to meet the wants of some forty or fifty million souls. But double the present consumption in twenty-five years, and steadily augment the annual drain on all land in cultivation, and what will be the condition of American agriculture, and of the Grand Republic, at the close of this century?

In place of resting old fields, *restitution* of the essential elements of crops will be the general practice. To this system of tillage and husbandry all must come at no distant day. But what elements of crops is it essential to restore to old fields? Their careful study must precede a wise answer.

Salts of lime, such as land plaster and bone-earth, have long been used to increase crops grown on poor land. It is, therefore, fair to presume that they supply elements essential

to fertility, which are lacking in soils cultivated with defective or no manure. Some fields, however, are so poor in other essential elements of crops, that no amount of lime salts will impart fruitfulness. Potash and magnesia, in an available condition, are really abundant in soils long cultivated, and being found in all crops, they must be applied artificially, or eliminated from clay or sand that contains them in an insoluble form. Where soda or chlorine is deficient, common salt is the proper fertilizer. How is the owner of land that lacks some one or more elements of plant food, to know which are absent and which present? Certainly he cannot know this by intuition, nor by any possible manual labor. It is that kind of knowledge which the careful study of facts applicable to the subject will alone impart. Subsoils, for many feet in depth, sometimes so abound in the mineral elements of plants that they serve as good manures, when spread over a poor top soil.

Mr. Geddes stated before the New York Farmers' Club, that earth dug out of a cellar on the drift formation on his farm in Onondaga county, produced a fair crop of oats, without any vegetable mold. Mr. Williams, of Ithaca, in the same State, has raised good wheat on naked subsoil, where the top soil, for two feet or more, had been removed in grading near his dwelling. Genesee shales, dug from deep wells, have disintegrated and yielded excellent wheat and clover, with less than a half per cent. of organic matter. To recuperate old fields that have rocks and subsoils of this character, is a simple and easy operation. But suppose the subsoil is poorer in agricultural salts than it is possible to make the surface soil, as sometimes happens? Such land invites experiment with any fertilizers one may have at his command. Bone dust and gypsum, used with clover, may, or may not, give a fair stand of this renovating plant. If they do, then the improvement of the field is cheaply attainable. If they fail, wood ashes and salt, or the nitrate of soda, should be used in addition to bone earth and land plaster.

To plough deep, and subsoil for lime, potash, phosphoric acid, and other known fertilizing substances, where they exist in too small quantities to pay twenty cents a day for the labor expended, is nearly the point reached by our common knowledge of deeply impoverished fields. Some lime such fields with

results that discourage the repetition of the practice in the same communities. It is not a part of the mineral constituents of plants that naturally poor soils require, when long cultivated, but the whole of them, usually, with the exception of iron; and in white pipe clay, as found near the cities of Augusta, Ga., and Hamburg, S. C., even iron is wanting. The presence of pure clay and silicious sand gives little more than a place for the deposit of plant food.

As one may have a deep well, both cool in summer and warm in winter, and no water, so he may have land by the thousand acres with much of the raw material for making grain, grass and cotton left out. These natural defects are not so easily remedied as those inflicted by the plough, and the removal of crops from naturally fertile soils. This distinction as to the origin of the cause of infertility is important; for where the subsoil is good, an old field may be made highly productive by plaster and rest in clover, as the writer has practiced with success. But where the surface soil is washed off and the subsoil is quite barren, the case requires other remedies. Hot lime from the kiln, mixed with salts from the ocean, and moistened to slake the lime, is likely to prepare the ground for grass, white or red clover, by cultivating the subsoil. Any herbage, even moss that grows on a rock, is better than perfect nakedness. Grass and all clovers accumulate plant food at and near the surface, to form in time a fair top soil on the most denuded land. It is for this reason that the writer has so long urged American farmers to have less land in annual tillage crops, and more in the best perennial grasses and clovers.

Tillage consumes vegetable mold; while rest from the plough, with a carpet of green herbage, produces a valuable crop of organic matter in the ground, which acts as an invaluable chemical force to develop potash, soda, lime and magnesia from their insoluble combinations. Carbonic acid and ammonia evolved from stable manure have a similar force where such alkaline combinations exist. The grand difficulty in regard to improving large fields by stable manure is the great expense of making and hauling an article so bulky and weak in power. A more concentrated fertilizer must be used on large farms or plantations to produce manure precisely where it is needed. On ninety-nine farms in one hundred, clover will do this cheaper than

to buy and haul stable manure, were the supply ever so abundant. A few bushels of the best agricultural salts and a little clover seed, will manure a ten acre field better than one hundred, or even two hundred, loads of common yard manure. Compound salts for the poorest old fields should be prepared by competent manufacturers. Human excreta and sea salts will form such a fertilizer.—*Rural New Yorker*.

Manures; how and when to use them.

It always affords us pleasure to be able to present judicious articles upon the important subject of manures, their proper economy, &c. The following, bearing upon some of these facts, will be read with interest and profit. The hints thrown out should be carefully considered and improved by every farmer, as they are practical in character, and in one form or other, are susceptible of almost daily application:

"The best method of using stable or barn-yard manure for corn or potatoes, is to haul it freshly from the cellar in the condition in which it rests in the vaults, spread it upon the ploughed field, and harrow it in with a Gedges harrow. This is what is called 'long manure,' and is a form which, according to the opinions of many farmers, is unsuited to immediate use; also, it is objected, that in spreading fresh manure upon ploughed fields and covering it only superficially with earth, much of it is lost by *evaporation*; or, more correctly speaking, certain volatile, gaseous constituents rise on the breeze and are wafted away. In our view, both of these notions are incorrect. The excrement of animals must undergo a kind of fermentation, or putrefactive change, before it is assimilated by plants, and it is better that this be carried forward in the field, as there it is in contact with the soil, which is greedy to absorb all the products of the chemical change. Creative power has bestowed upon dry earth prodigious absorptive capabilities. If a lump of fresh manure as large as a peck measure is placed upon a ploughed field uncovered, and allowed to ferment or decay in the open air, the absorptive powers of the earth are such, that it will actually *attract towards it* ammoniacal and other gases, and thus rob the atmosphere of its natural and volatile principles. A film of earth no thicker than the rind of an orange, placed over a lump of manure, will effectually

prevent loss of manurial products, under all possible circumstances. It will be agreed, then, that a harrow is equally as effective as a plough in protecting manure in the open field. It is better to have the manure near the surface, as the rains can reach it, and dissolve the soluble salts, and by percolation carry them down to the hungry roots of plants.—Long manure is *not lost* when deeply turned under by the plough, but the farmer *does not* secure the whole value of his dressing under this mode of treatment in any case, and on some soils the loss is a most serious one. In the process of soap-making, it becomes necessary to set up a leach. Now, the farmer will not attempt to exhaust the tub of ashes of its potash by forcing water into the bottom and dipping the liquid off from the top. The natural percolating or exhausting process is *downwards*, in accordance with the laws of gravity. The soluble alkalies and salts are driven downwards, and in the case of the leach we must have a vessel ready to receive them at the bottom, and in the case of the same substances leached from manure, we must have the manure so placed that plant roots will be at hand to absorb them before they pass beyond their reach.

Manure is never so valuable as when it is fresh. It then holds in association not only all the fixed soluble substances, natural to the solid excrement, but much that is of great value, found only in the liquid. It is in a condition to quickly undergo chemical change, and the gaseous, ammoniacal products secured are double those resulting from that which has been *weathered* in a heap out of doors for several months."—*Boston Jour. of Chemistry*.

THE EGG QUESTION.—A report of eleven pages long was lately made to the Legislature from Massachusetts, upon the bill for regulating the sale of eggs by weight. In this report, the minority, who favor the bill, discussed the aspect of the egg question, ancient and modern, from every point of view. They contrasted the size of eggs and bonnets, and declared that the female managers of the poultry yard have studied political economy profoundly, and with incalculable advantage to themselves, in order to reduce the size and increase the number of their eggs. They treat voluminously upon the egg trade between France and England, and upon the most approved manner for sitting hens. The majority declare in flat terms upon the bill.—*Ex.*

Hints on Horse Flesh.

As five years are required for the completion of the bone structure of the horse, it is important that he be carefully used until that age. If he is early over-worked, the ligaments which unite his one hundred and thirty bones are prevented from becoming sufficiently fixed to the frame, and he is dwarfed, and wears out or dies long before reaching the full twenty-five years which should be the average duration of his life and vigor. The muscles of a fine horse ought to be thick and very long; thickness ensures strength, and length an extended sweep of limb.

Properly constructed harness is as essential to the comfort of a horse as easy clothes are necessary to the comfort of a man. If harness is not well fitted to form, the veins are compressed circulation is retarded, and disease ensues. When in motion, the horse regulates his centre of gravity by using his head and neck. The check-rein is therefore inhuman and injurious.

If a horse is compelled to run when his head is held in a vertical position, the gravity is thrown too far back, and he advances with difficulty. The ears may be called indices of a horse's mind. Intelligent animals prick up their ears when spoken to, vicious ones throw their ears back. A blind horse directs one ear forward and one backward, and in a deaf horse the ears are without expression.

The ears of the horses are short and wide apart, the eyes are well open, and the forehead is broad. A broad forehead indicates good brain. The Arab says: "The horse must have the flat forehead, and the courage of a bull." The horse breathes by his nose, and not by his mouth; hence the nostrils should be large, so the fresh air may be taken in freely. Dealers enlarge the nostrils of their horses by artificial means. The mouth of a young horse is round; in age it becomes narrow and elongated.

The Arab says, in speaking of his horse; "The first seven years are for my young brother, the next seven for myself, and the last for my enemy."

A horse has only one jugular vein, a man has only three. The withers can never be too high; the higher they are the easier the animal travels. The loins should be short, the chest square and the shoulders well developed. The veterinary surgeon who said, "No foot, no horse," was perfectly correct.

The hoof is a curious and complicated mechanism; an elastic box, which expands and contracts as the horse raises or puts down the foot. Shoeing should be done with care and skill, or the natural form of the hoof is destroyed. Above all, so noble an animal should be treated with the greatest kindness, and no pains should be spared to make his bonds as easy to wear as may be.—*Dr. Lemercier.*

New and Valuable Invention.

A real genuine Maryland invention was exhibited at the late State Agricultural Fair—one that will, in a short time, revolutionize the manner of preparing the soil for the reception of grain. It is called the "Revolving Sulky Harrow." This implement deposits the fertilizer, grain and grass seed at one time, and while pulverizing the soil covers the two first in a beautifully prepared seed bed, and leaves the latter deposited upon the finely comminuted soil in the rear, to be "set" by the first shower. The inventor labored for five years in perfecting the machine; and when he regarded it as being perfect in all its bearings, he brought it to the notice of farmers and others, by first placing it on exhibition at the Cattle Show, instead of rushing it before the public prematurely, so often the cause of failure. In novelty of construction, design and execution, the machine stands alone with no other "Richmond in the field." It will accomplish from 10 to 15 acres per diem, depending upon the skill of the driver, quality of the team and soil. Its great advantage is that there is nothing *local* in its character, but is adapted to universal use in every quarter of the globe, where wheat, rye, oats, buck-wheat, barley, peas, etc., are grown, and will go in immediately after the ploughs without any rolling or other preparation. With it there need be no fear of land being run "together" after rain, for the farmer, with this great implement, can put in his seed and fertilizer as rapidly as he can plough, and go home at night and smile at the storm. The machine can be seen at the establishment of R. Sinclair & Co., on Light street. The inventor of this great labor-saving machine is a Mr. Taveau, from one of the lower counties, a farmer of great intellectual researches and one of the most substantial gentlemen in his section of the country. Besides receiving the first premium, Mr. T. was awarded the *gold medal* for his invention.—*Exchange.*

The American Farmer.

Baltimore, December 1, 1869.

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SPECIAL CLUB TERMS—THE HORTICULTURIST AND AMERICAN FARMER.—By special arrangement, we offer *The Horticulturist* and *American Farmer* on Club Terms together, for \$3.75, full price being \$4.50, each club subscriber being entitled to a choice steel plate engraving, *Country Life*.

We commend *The Horticulturist* to the attention of lovers of fruits, flowers and rural embellishments. Having been greatly improved this year, it will be found one of the best and most valuable horticultural journals published in the United States.

BRAIN POWER.—Among the several "Powers" on exhibition at the State's Fair, hand power, horse power and steam power, there was a greater than all represented in the farmers' sons, from the State Agricultural College; the power of knowledge—*brain power*. That such a power is applicable to farm work has not been very commonly allowed, but the idea, "bodied forth" in this goodly company of young farmers, whose manly and orderly appearance took the eye of all lookers-on, has had a reality given to it that will not fail of its influence on our people. They will be recognized as the advanced guard of the great army of coming farmers, who will be brought up in the faith, that in agriculture as elsewhere, mind is more than muscle.

THE AMERICAN FARMER.—We are greatly obliged by the friendly notices of many of our exchanges. We hardly expect them to make more than a mere announcement of the receipt of the paper and an enumeration, perhaps, of some of its leading contents, but many, of our Southern friends especially, go much beyond this, and show such an appreciation of the *Old Farmer*, as we are almost too modest to repeat. We may however, only in the way of business, preserve part of a carefully written article that we find lately in our excellent contemporary, the *Norfolk Virginian*:

"Here and there, in the periodical under notice, one which in the fiftieth year of its existence, is still the best digest of all practically useful articles on its subject extant, we find expressive lines that condense all we could possibly say to recommend its full perusal to every owner of an acre:

'It is not muscle that produces the crop which carries off the top price in market, but brains. It is care, attention, with brains, that are required—more head work than hand work.'

When the sons of the South learn and appreciate this elementary truth, then, and not till then, leaning on her mountains and 'laving her beautiful feet in the sea,' will her glance triumphant, prouder ever than of yore, sweep over the heaving mass, flecked with the gleaming trophies of her recovered sway."

THE GEORGIA STATE FAIR.—We find in the *Washington Chronicle* a report of an address made by the Commissioner of Agriculture, Gen. Capron, at the Georgia Fair, which is received at so late a period that we can only say of it, that it is at once sensible, practical, and in good taste, as we should expect it to be from that source.

Judge Woodward of Penn., and Gen. Wade Hampton, also made addresses, of which we have as yet no reports. We find, however, the following remark made by the latter:

"Gen. Hampton, in his address, said that he thought negro labor was better than any other class we can possibly procure. He believes the South will, in a short time, regain its former prosperity; he counseled the cultivation of more patriarchal relations with the freedmen's wants, while their moral and intellectual status should be improved."

We are glad to learn that the Exhibition Georgia has been a very successful one.

State Agricultural Society.

We deferred the publication of the list of Premiums awarded at the late Exhibition of this Society in our November number, because we wished to print it only in an authentic and reliable form, and knew that that could not be done from notes hastily gathered at the time. We give the premiums now, taken from the official reports.

The awards, we are sure, were in no case unworthily bestowed, although it is quite possible that errors of judgment were committed in deciding between animals or articles closely competing. It were a wonder indeed if there were not, when decision was to be made between objects of so much merit as were largely displayed at this Exhibition.

The Horses, Cattle, Sheep, Hogs, and Implements of Husbandry, with the large number of Miscellaneous matters, Household articles and Poultry, were of the best description, and made up an Exhibition of the greatest value and interest.

We need hardly occupy space in particularizing, and it were almost invidious to do so, but can not fail to name among cattle, the far famed Devon Herds of Mr. George Patterson and Gov. Bowie, the beautiful Alderneys of W. Devries, President of the Society, Mr. John W. Garrett, Mr. J. Howard McHenry, Mr. William C. Wilson, and Mr. Charles Ridgely.

Among the very large number of superior horses, were the fine imported Percherons of Mr. Wm. T. Walters of Baltimore and the noble Stallion of same breed of S. W. Ficklin, Esq., of Albemarle county, Va., Col. Fairfax's Conductor, and Col. Cochran's Engineer, Gov. Bowie's Stonewall Jackson and Baltimore, Magene, Legatee and others.

Mr. Thomas Hughlett of Talbot Co., C. E. Coffin of Prince George's Co., and many more exhibitors of fine stock than we can mention here, have due notice in the list of awards for excellence.

So of exhibitors of farm implements and machinery; the old and well known firms of Sinclair & Co., Whitman & Co., Thomas Morris & Son, with Jas. Brewster, Linton & Amott, A. G. Mott, Heacock & Co., J. Montgomery, Slade & Co., A. B. Farquhar of York, Pa., and others.

Students of the Agricultural College.—The students of the Agricultural College visited the Fair by invitation of the Executive Com-

mittee on Thursday and were kindly received by Mr. Devries, Pres't, who had them shown to the upper floor of the grand Pavilion, where they had the best opportunity of seeing the grounds, the driving on the track, and the mass of people. A morning paper had the following in its notice of Thursday's proceedings:

"About noon, the students from the Maryland Agricultural College, about eighty strong, dressed in their neat uniform of gray, marched into the ground, headed by martial music. They were under command of Major F. A. Soper, and by their neat and soldierly appearance attracted much attention. The more advanced scholars appeared to take much interest in the fine cattle on exhibition, and also in the many improved agricultural implements displayed."

An Incident. Race and Color.—If Mr. Forney, who edits two papers, "both daily," and the "Weekly Press" besides, saw anything threatening or dangerous to the Government in the grand display made by Gov. Bowie's Militia at the Fair, he was soothed and quieted effectually, in the loyalty to brotherhood, which was exhibited on the judges' stand in a question of "race and color." Mr. Daniel Steever, the driver of the horse "Moses," was in for the "race," but, being a white man, did not like the "color" of one of the competing drivers, who was a negro, and refused to drive "Moses," who was a gray horse, under what he thought humiliating circumstances. This gave pause to the proceedings, but the committee promptly decided, that if Mr. Steever couldn't take "race and color" together, he was no brother of theirs, and should not ride the race without the color; and that white man being obstinate, he was "ruled forever from the track." So we learn from a correspondent of the "Turf, Field and Farm," as follows: "At the call of the bugle the horses did not come to the score, and after considerable delay it was discovered, that some of the drivers would not go into the race because a negro man was to drive the mare belonging to Mr. Carroll. An effort was made to reconcile the matter, but it did not avail. Becky, No Name and Moses appeared on the track, but Market Girl and Prince did not respond. At one time it was thought the difficulty would be settled, but Daniel Steever, the driver of Moses, positively refused to drive a race with the negro as a competitor, and the judges

ruled him forever from the track. Mr. Fawcett then approached the judge's stand and said his horse should go, and he procured another driver. The bugle then sounded the call, and No Name, Becky and Moses came to the score, but they were so far in the rear that they were called back. Two more unsuccessful attempts were made, but in the fourth attempt the word was given. The horses came well to the score, the mare occupying the middle position, being some two lengths in the rear. The other horses moved off well. At the start No Name was about a half length in advance, and both horses trotted well and close together, No Name holding the lead. At the half-mile post Moses made a dash and closed the gap. At the homestretch both came in well together, but Moses again fell off and No Name held the lead to the score, which he reached by one length ahead. Becky was distanced."

The idea of the superiority of the white race may seem to be vindicated in poor Becky's being distanced by a horse of "No Name," but it was very wrong in Mr. Steever, not to say impolite to the Society's guests, Mr. Post Master General Creswell, and other members of the Government who were present, to open this aggravating issue on so festive an occasion. The ruling of the committee served him right.

The Wickedest Club in New York.

To an indifferent outsider, it is very amusing to note the righteous indignation of Mr. Greeley as expressed at a late meeting of the Farmers' Club that meets weekly at the American Institute in New York city. The subject of discussion is what the philosopher calls "the wickedness perpetrated in this room—the advice to plough shallow." Certain members of this club, it seems, had been rash enough, after all that has been said upon the subject, to express the opinion that deep ploughing might not be the great thing it was made out to be, and that on soils of a certain description, especially in the State of New Jersey, it was quite possible to farm successfully and still not plough very deep. Mr. Greeley traveled down South this summer, and observing the ruinous effects of the drought on the corn crop, determined at once in his mind that it was not the drought, but the shallow ploughing. He told the people who assembled to hear him talk at Lynch-

burg, how it all was, but did not blame them so much, ignorant barbarians as they were. It was that wicked New York Farmers' Club who had wrought this wide-spread ruin to the crops by advising people not to plough deep. The advice to plough shallow, he says, "has already cost this country a million bushels of corn. I had occasion to travel in the South not long ago, and in Virginia and some part of the Carolinas, this cereal will not be a third of a full crop. This result, in my opinion, is entirely owing to shallow ploughing. They will tell you drought did it, but this cannot be true, &c. We must warn the people against the miserable and monstrous fallacy of shallow ploughing, or we shall have famine in this country."

Mr. Lawton backs up his friend as follows: "I am rejoiced to listen to these remarks. We have done wrong, very wrong (wickedly, very wickedly,) to let any word go out from us that would encourage the practice which the gentleman who has just spoken so justly condemns."

Mr. Fuller says: "I said at the time, if my memory serves me, that the publication of Mr. Pettet's letter would do these United States more harm than this club has done good for half a score of years."

Now it is plain these worthy gentlemen are taking this matter very seriously. Just think of the good done by this club "for half a score of years," if you would duly estimate the evil resulting from that fatal letter of Mr. Pettet's. Think of those millions of bushels lost, if you would appreciate the wickedness of this Farmers' Club. The staid editor of *The Practical Farmer*, of Philadelphia, joins in the depreciation of those wicked utterances, and says sadly: "there can be no reasonable doubt that the theories of one or two men in the New York Farmers' Club, whose proceedings are widely circulated, have cost the country a million bushels of corn."

We hope to bring relief to these melancholy philosophers by the assurance, that though deep ploughing may be the "sovereign thing on earth" for dry times, and though may not be denied that the eyes of Delaware and other near-lying parts, are upon this New York Club, the people who are supposed to have suffered especially by the drought, have not let up their ploughs the ninety-ninth part of a hair for any influence that the club has had upon them. They know very little and

care much less about the utterances of the notional gentlemen who hold forth at their weekly meeting. They can shoulder the responsibility and bear the burden of this as well as their other sins, and will mend their ways not by the sage advice of which they get so much, but as their poverty and their burdens allow.

Maryland Ham and Maryland Biscuit.

It was he who was only less philosopher than poet, who said, "Upon what meats hath this our Cæsar fed that he hath grown so great?" The influence of food upon character has not been pursued by modern philosophers, but there is more in it than we dream of, may be, and it will be found out when we have grown more knowing. What Cæsar and other great people fed on we don't know, but for your people who don't care to be great or rich; your true hearted, clear headed, satisfied, God-fearing people, such as we know so many of in this good old State of Maryland, and who abound in the good city and county of Frederick, the proper food for everyday work is, primarily, Ham and Biscuit; flanked and garnished and varied of course. That which we call piously our "daily bread" is Ham and Biscuit. What we fall back upon from our feasting days of turkey and venison and Eastern Shore mutton and canvass back duck and oyster and terrapin, to the stern reality of work days, is Ham and Biscuit. But it is such Ham as outsiders, excepting our neighbours of Virginia and North Carolina, hardly know of, and Biscuit just such as prim and proper Miss Leslie had not the least conception of when she described in her cook-book Maryland Biscuit as made in the State of Pennsylvania; in fine, just such Hams and Biscuit as are made by our good country women of Maryland, and of the city and county of Frederick especially.

These remarks are suggested by what we find in a late number of the Rural N. Yorker from a correspondent who visited the late Agricultural Fair at Frederick, and says: "The feature of the exhibition that interested me most was the cooked articles, which distinguished it from all other shows that I ever attended. I counted one hundred and twenty-five entries of this class, including bread, cake of all kinds, various preparations of Indian meal, jellies, catsups, canned fruits, boiled hams and tongues, &c. There were some

very fine exhibitions of the famous Maryland biscuit, which the ladies of Maryland pride themselves upon. It would be true missionary work if some of those ladies would come among us and teach us how to make them; the first of the noble band who thus came forward would immortalize herself, and would ever after rank with Jason of the Golden Fleece memory. I would describe the flavor of the boiled hams for your benefit, if I could; but really my vocabulary is too poor to do justice to the subject."

A Grape Growers Association in Maryland.

We commend the following to the attention of grape-growers in Maryland. Why should we not have such an association as is here suggested, and a general fruit-growers association, too.—Ed.

Editor of American Farmer:

DEAR SIR: Some five years ago I became convinced that the section of country watered by the Chesapeake Bay and its small tributaries, was, both by situation and soil, especially adapted to the cultivation of the grape vine. Acting upon my convictions, I purchased a farm lying on the north side of the Bohemia River, in Cecil county, and set myself about to plant a vineyard. My four years' experience has only confirmed my belief, and I think that, should next year be as favorable a season as the past four have been, I will be able to show 20 acres of as fine Concord grapes as can be seen anywhere in the United States. My principal object in addressing you, however, is to reach those of your readers who are interested in grape culture, with the view of forming a Grape Growers Association of Maryland, for the purpose of advancing and encouraging the cultivation of a noble fruit which seems perfectly at home with us—and especially so upon those sections which feel the ameliorating influences of the Chesapeake Bay.

My friend, Mr. G. H. Mittenacht, of Pikesville, Md., who has been a yearly visitor to the grape growing sections of the West, for the last twenty-five years, fully reiterates all that I can say in praise of our section for grape growing, and we would be obliged if all persons feeling as we do in the matter would address as below.

EDWARD P. HIPPLE,
*Bohemian Fruit Farm, Town Point,
Cecil County, Md.*

Or
G. H. MITTNACHT,
Pikesville, Baltimore County, Md.

Valuable Discovery.

"How Plants Grow" Mr. Gray tells us in his Botany, and "How Crops Grow," Professor Johnson treats with abundant scientific insight in his little work with that title, but How Chickens Hatch, has not had that serious attention of men of science that the gravity of the subject and its universal interest demands. Not a man, woman or child, in all countries, and all the centuries of the world, but have had an interest in chickens, and, that how they hatch has never been investigated, and how the innumerable—the myriads of these little creatures have been brought forth from the egg shells has never been discovered—until now—betrays an indifference to scientific knowledge and philosophical inquiry, which is unworthy of an enlightened age.

It has been generally, nay, almost universally, believed by our farmers' wives, who are presumed to be most familiar with the subject, that the chick, when his time comes to be born, "pips" the shell from the inside, and from that point of departure works around in a circle until the top of the shell breaks up like the lid of a vessel and chick tumbles out with astonishment into earthly existence.

Our neighbour, the *Maryland Farmer*, having inquired into this matter with careful research, gives us the result of his investigations in the article appended. It is true the article is credited with the indefinite "Ex." as if it were taken from some other journal, but this is, perhaps, only a modest way of putting the matter—we know how modest even Newton was—and until we find the contrary more positively indicated, we must claim the discovery for our city and State. At any rate a "Maryland Farmer" is the first to promulgate the discovery. We copy as follows from our neighbour:

"How EGGS HATCH.—People have an idea that the hen sits on the egg for a certain time, and that when the time comes for hatching the chick bursts forth. There never was a greater mistake. The chick, until liberated from the shell 'by outside aid,' is as incapable of motion as if formed a solid with the egg, which it nearly does. You might as well enclose a man in an iron boiler, and tell him to get out without tools, as expect a chick to get out of the shell without help. The chick grows and swells in the inside of the shell,

until at last the excrescence on the point of the beak of the bird presses against the inside of the shell, and bursts up a small scale; of course when it does this, it at the time breaks 'in that spot' the inside skin of the egg. This admits the air; in a short time it breathes and gets strength to cry loudly. The hen then sets to work to liberate it; she brings it forward under the feathers of the crop, and supporting it between the breastbone and the nest, begins, the work of setting her progeny free. She hitches the point of her beak into the hole formed by the raising of the scale by the chick's beak, and breaks away the egg skin or shell all round the greatest diameter of the egg. The joint efforts of the hen without and the chick within then liberate the prisoner, and he struggles into existence, and gets dry under the feathers, and with the natural heat of the hen.

All female birds, which set on their eggs to hatch them have the hook in the beak strongly developed. Even the broad-billed duck and goose have these hooks specially developed, and with them they liberate their young. In Australia, where everything seems to be by contraries, it is the cock of the brush turkey that hatches the eggs and not the hen. It would be interesting to know whether the hook of the beak is better adapted for this service in the male of that bird than in the female; the hook on the beak of the ordinary cock of the common fowl is quite different from that of the hen—it is adapted for wounding in fighting, but not for the hatching of eggs.—*Ex.*"

Thus it will be seen that the chick only breaks the skin "in one spot," and then hallowing for his mamma, she, with true maternal instinct, "hitches the point of her beak into the hole" formed by the chick's own beak, and lets him out.

The astute remark that "all female birds, which set on their eggs to hatch them, have the hook in the beak strongly developed," will attract attention; and the suggestion as to whether or not the turkey gobbler of Australia is detailed to the duty of hatching the eggs on account of nature having made a mistake and given him, instead of the hen, a beak with "the hook developed," denotes a philosophical determination of mind that promises further discoveries.

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Book Notices.

Agricultural Chemical Analysis, after E. Wolff, Fresenius, Krockner and others. Edited by J. C. Caldwell, Professor of Agricultural Chemistry in Cornell University. Orange Judd & Co., 245 Broadway, New York. We have a copy of this little work from the publishers, but too late for further notice in this number.

DeBow's Review.—We are in receipt of this able Review for October, with its usual variety of matter relating to the industrial interests of the South.

Demorest's elegant ladies Magazine for December, is super-excellent in its display of fashions and other illustrations, and has an abundant supply of entertaining reading matter.

"*Young America*," from the same source, is not behind-hand in its way, and indeed, like all "young America," is constantly going ahead. A new and most interesting feature consists of a beautiful chromo-series of Audubon's American birds. The first of the series is Robin-Red-breast, which we have this month for a picture.

The Magazine \$3 and *Young America* \$1.50. 838 Broadway, N. York.

From T. S. Arthur & Son, 809 and 811 Chesnut street, Philadelphia, we have their famous monthlies, *The Home Magazine* and *Children's Hour* and *Once A Month*. It is promised that "excellent as they already are, they will present new attractions the coming year." The prices, respectively, \$2, \$1.25 and \$2.

The Little Corporal, the delight of the children, and certainly not behind the best of its kind, comes attended with the first number of a new quarterly issue, called the *Little Corporal's School Festival*. The former \$1 and the latter 50 cents. Published by Alfred L. Sewell & Co., Chicago, Illinois.

THE VIRGINIA STATE FAIR.—The sanguine anticipations of our Virginia friends have, we are happy to say, been abundantly realized in their great State Fair. The exhibition was admirable, and the attendance very large, reaching, it is said, the number of 30,000 visitors in a single day.

THE "EARLY ROSE" POTATO.—We have received from Mr. J. D. Richardson, of Frederick Co., some beautiful specimens of this famous potato, and find them, on trial, to be of very good quality. A good potato, acknowledged to be very early and very productive, is certainly a great desideratum, and the "Early Rose" will no doubt be very largely planted the coming season. Mr. Richardson's are genuine, we do not doubt, and we presume he will have seeds for sale.

Value of Our Crops.

The following table represents the value of leading crops for the year 1868, the estimates being made upon home values in the respective States, and furnished by the Commissioner of Agriculture at Washington.

Indian Corn.....	\$569,512,460
Wheat.....	319,189,710
Rye.....	28,683,677
Oats.....	142,484,910
Barley.....	29,809,931
Buckwheat.....	20,864,325
Potatoes.....	84,150,040
Tobacco.....	40,081,942
Hay.....	351,941,930
Cotton.....	225,000,000

Total \$1,811,068,915

It will be seen that much stress as is and has been laid upon the value of our great wheat and cotton crops, they are not the first nor even the second crops in value, the first rank being held by Indian corn, so far above competition as to render it remarkable how so much attention was ever concentrated on the magnitude and value of other products. Its range is greater than that of any other crop in the country, covering the whole Union from end to end, and its cultivation is so general that in traveling through any section one may always safely calculate on seeing growing corn. Whether a farmer can send his cotton or his wheat to market or not, he can always make use of Indian corn, for if he cannot sell it to advantage he can feed it to his live stock, or dispose of it in other ways. By the former process the large provision trade of the west has been built up. At the south corn is the bread of the plantation hands universally.

The reader will also observe that the hay crop exceeds in value that of wheat or cotton, and holds the second place on the list. This is not accidental or temporary. It has always been so, and probably always will, in consequence of our great demand for hay to feed to horses and cattle. The hay crop, like that of Indian corn, is also most universal, and

there are thousands of acres in the west formerly cultivated in grain that are now devoted to hay in consequence of the sudden increase of the demand for that article, caused by the rapid increase of population in all the cities and towns of that section; This is a steady and reliable crop for which there is always a demand in any populous region, and about which there is scarcely any risk. The diminution of the production of wheat in such States as Pennsylvania and Ohio may easily be accounted for by the increased attention to such crops as hay, rendered absolutely necessary by the growth of cities and towns. So it is becoming, also, in Indiana and Illinois, and thus the center of wheat production recedes farther and farther west. The increase in the oat crop is for the same reason, and that, like hay, must go on permanently increasing from necessity, though not on the same scale. At the present time its value as a crop equals the sum of buckwheat, potatoes and tobacco.

The value of the cotton-crop being below that of the wheat-crop, shows how vast an extension the latter acquired during the war, when it was in such unusual demand both for home consumption and for export. Since the close of the war a large surplus of wheat has been produced and shipped from the southern interior, so that in this respect the south has become self-supporting. It raises its own breadstuffs and provisions. The wheat-crops of our Pacific coast have become so great as to constitute an important item in the supplies of Australia, India, England and the Atlantic States, and these crops are increasing in an enormous ratio. At the same time the area of wheat-culture is extending very fast in Michigan, Wisconsin, Minnesota, Decotah, Iowa, Nebraska, Kansas and Montana. Under all these circumstances there can be little doubt that the value of the wheat-crops will continue to rank ahead of cotton, and unless more energy shall be displayed by the cotton-planters, it would not be surprising to see even the oats crop go ahead of cotton. It will be remarked also that the tobacco-crop makes far less progress in recovery of its lost prosperity than any of the southern products, which doubtless may be attributed to the terrible ruin and desolation of Virginia the headquarters of tobacco-culture. Tobacco has of late years been quite a profitable crop in the north, but its true home is in Maryland, Virginia, West Virginia, Kentucky, and the neighboring regions, and in due time will flourish there again as it did of old.—*German-town Telegraph.*

New Implements.

We copy the following from the Richmond Farmer's Gazette and ask attention to it, and to the proposal of our friend Col. French, to furnish this implement:

CHESTERFIELD, Va., Sept. 1.

The undersigned having this day witnessed the trial of the pulverizing and deep tillage implement lately patented by James W. Murfee, of Havana, Alabama, make the following statement: Two of these implements were exhibited, one for two horses, the other for one. They were worked on a field of very hard, flat, clay land, which a four horse plough was laboriously breaking up to the depth of seven or eight inches. The two horse implement broke the soil to the depth of about nine inches and cracked it through for about nine inches on each side of the stroke. The one horse implement broke the land to the same depth and cracked it thoroughly six inches on each side. The work resembled coultering, and was better done, both in style and extent of cracking the soil, than we ever saw it, done by any other implement of its class.

The single horse implement was then taken to a well ploughed cabbage patch and worked one foot deep, and one foot wide, and with ease to the horse and great excellence of execution.

Where sub solling is desired, we think this the best and easiest working implement of that sort we have ever seen tested.

From this statement of what was accomplished, every one can judge for himself to what uses he would apply such an implement. For all work that it ought to do, we think it a valuable implement.

JAMES B. JONES,

J. A. CONNER, of Americus, Ga.

R. A. WILLIS,

W. ROANE RUFFIN,

JNO. W. JONES,

S. BASSETT FRENCH,

F. G. FUFFIN.

The great point claimed by the Inventor is, that the Pulverizer will break and pulverize more land, in depth and width, in a given time with less labor, than any other known implement, and we think the trial established this claim.

We will purchase this plough for any of our friends.

Single Plough.....\$6 00
Double Plough..... 9 00

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State Agricultural and Mechanical Association.

LIST OF PREMIUMS AWARDED.

HERD PREMIUMS.

Best Devon Herd, \$100, Gov. Bowie; best Alderney Herd, \$100, William Devries; best Hereford Herd, \$100, John Merryman.

Sweepstakes.—Best herd of any pure breed, \$200, Geo. Patterson.

IMPORTED CATTLE.

Best Devon Bull, \$50, Geo. Patterson; best Alderney Bull, \$50, William T. Walters; best Alderney Cow, \$30, W. C. Wilson.

AMERICAN BRED CATTLE.

SHORT HORNS.

Best Bull 3 years old, \$50, Thos. Hughlett; 2d best do., \$25, J. W. Fairfax; best Bull between 1 and 2 years old, \$20, C. E. Coffin; best Bull Calf, \$10, Thos. Hughlett; best Cow 3 years old, \$30, C. A. Murphy; 2d best do., \$20, C. E. Coffin; 3d best do., \$10, C. A. Murphy; best Cow between 2 and 3 years old, \$20, C. E. Coffin; 2d best do., \$10, C. A. Murphy; best Cow between 1 and 2 years old, \$20, C. E. Coffin; best Heifer Calf, \$10, C. E. Coffin.

DEVONS.

Best Bull 3 years old, \$50, Gov. Bowie; 2d best do., \$25, Geo. Patterson; best Bull between 1 and 2 years old, \$20, Gov. Bowie; best Bull Calf, \$10, Gov. Bowie; best Cow 3 years old, \$30, Gov. Bowie; 2d best do., \$20, Geo. Patterson; 3d best do., \$10, C. E. Coffin; best Cow between 2 and 3 years old, \$20, Geo. Patterson; 2d best do., \$10, Geo. Patterson; best Cow between 1 and 2 years old, \$20, Gov. Bowie; 2d best do., \$10, Gov. Bowie; best Heifer Calf, \$10, Gov. Bowie.

ALDERNEYS.

Best Bull 2 years old, \$50, Wm. C. Wilson; 2d best do., \$25, R. Moore; best Bull between 2 and 3 years old, \$20, C. Y. Councilman; 2d best do., \$10, T. J. Ferguson; best Bull between 1 and 2 years old, \$20, J. H. Riegan; 3d best do., \$10, Joseph F. Foreman; best Bull Calf, \$10, William Devries; best Cow 3 years old, \$30, W. C. Wilson; 2d best do., \$20, L. Mongar; best Cow between 2 and 3 years old, \$20, Charles Ridgely; 2d best do., \$10, Clark & Jones; best Cow between 1 and 2 years old, \$20, E. Y. Jenkins; 2d best do., \$10, James W. Tyson; best Bull Calf, \$10, B. W. Jenkins.

HEREFORDS.

Best Bull 3 years old, \$50; best Bull between 2 and 3 years old, \$20; best Bull between 1 and 2 years old, \$20; best Bull Calf, \$10; best Cow 3 years old, \$30; 2d best do., \$20; 3d best do., \$10; best Cow between 2 and 3 years old, \$20; 2d best do., \$10; best Cow between 1 and 2 years old, \$20; 2d best do., \$10; best Heifer Calf, \$10—all awarded to John Merryman.

GRADES OR NATIVES.

Best Cow, \$20, Mrs. Geo. Brown; 2d best do., \$10, Professor N. R. Smith; best Cow or Heifer between 2 and 3 years old, \$10, L. Mongar; 2d best do., \$5, C. A. Murphy; best Cow or Heifer between 1 and 2 years old, \$10, Col. McHenry; 2d best do., \$5, Colonel McHenry; best Calf, \$5, Mrs. George Brown.

FAT CATTLE.

Best Beef on the hoof, \$20, N. Lehman; 2d best do., \$10, Major J. C. Lloyd.

WORKING OXEN.

Best Yoke, \$50, J. C. Smith; 2d best do., \$30, John Haviland.

IMPORTED SHEEP.

LONG WOOLS.

Best Buck, \$15, E. Hicks; 2d best do., \$10, J. M. Pratt; best Ewe, \$15, George Jackson; 2d best do., \$10, C. A. Murphy.

AMERICAN BRED SHEEP.

LONG WOOLS.

Best Buck, \$15, Geo. Jackson; 2d best do., \$10, E. Hicks; best pen Ewes, \$15, W. T. Painter; 2d best do., \$10, E. Hicks; best pen Buck Lambs, \$10; 2d best do., \$10, both to Charles E. Hiester.

Discretionary Premium of \$10 to Dr. Wm. H. DeCourcy for Cotswold Buck.

MIDDLE WOOLS.

Best Buck, \$15, John Merryman; 2d best do., \$10, Oden Bowie; best pen of Ewes, \$15, Oden Bowie; 2d best do., \$10, John Merryman; best pen of Buck Lambs, \$10, A. R. Magraw; 2d best do., \$10, Thomas Woods.

Discretionary premium of \$10 to W. H. DeCourcy for 3 Shropshire Buck Lambs.

FAT SHEEP.

Best live Mutton, \$10, W. T. Painter; 2d best do., \$5, John Merryman.

SWINE—LARGE BREED.

Best Boar 2 years old, \$10, W. H. Oler; 2d best do., \$5, H. S. Sumwalt; best Boar between 1 and 2 years old, \$10, E. B. Ashbridge; 2d best do., \$5, W. T. Painter; best Boar between 6 months and 1 year old, \$5, W. T. Painter; Best Sow 2 years old, \$10, Thomas Woods; 2d best do., \$5, E. L. Baker; best Sow between 1 and 2 years old, \$10, E. B. Ashbridge; 2d best do., \$5, Thomas Woods; best Sow between 6 months and 1 year old, \$5, E. B. Ashbridge; best lot Pigs, \$5, W. T. Painter.

SMALL BREED.

Best Boar 2 year old, \$10, J. Chand. Smith; best Sow 2 years old, \$10, J. Chand. Smith; best lot Pigs, \$5, Samuel Sutton.

BLOODED HORSES.

Best thorough-bred Stallion, \$100, Col. Jas. Corcoran; 2d best do., \$50, F. M. Halle; best Mare, \$50, Thomas E. Hughlett; 2d best do., \$25, Gov. Bowie; best Horse Colt 3 years old, \$50, Gov. Bowie; 2d best do., \$25, Governor Bowie; best Horse Colt 2 years old, \$40, Dr. J. P. Thom; 2d best do., \$20, F. M. Hall; best Horse Colt 1 year old, \$30, Dr. J. P. Thom; best sucking Horse Colt, \$10, S. K. George; best Filly 3 years old, \$30, Gov. O. Bowie; 2d best do., \$20, Dr. J. P. Thom.

QUICK DRAFT HORSES.

Best Stallion, \$100, A. F. Fawcett; 2d best do., \$20, H. Haines; best Mare, \$50, J. L. Johnson; 2d best do., \$25, E. Whittaker; best Horse Colt 3 years old, \$50, L. Mongar; 2d best do., \$25, S. Wilhelm; best Horse Colt 2 years old, \$40, Col. Fairfax; 2d best do., \$20, B. F. Carroll; best sucking Horse Colt, \$10, T. L. Keene; best Filly 3 years old, \$30, Dr. J. P. Thom; 2d best do., \$20, Wm. H. Oler; best Filly 2 years old, \$20, Col. Fairfax; best Filly 1 year old, \$15, Samuel Hopkins; best sucking Filly, \$10, John Merryman; best pair Horses, \$50, Gov. O. Bowie.

GENERAL UTILITY HORSES.

Best Stallion, \$50, L. Mongar; 2d best do., \$20, L. O. Elisson; Best Brood Mare, \$30, Ely Ulery; 2d best do., \$15, Robert Moore; best pair Coach Horses, \$50, Moses Moses; 2d best do., \$20, D. Cookes; best pair Coach Horses raised by exhibitor, \$50, Gov. O. Bowie; best Gents. Saddle Horse, \$30, Henry Fraley; 2d best do., \$20, A. Johnson; best Ladies Saddle Horse, \$30, Nelson H. Bell; 2d best do., \$20, Wm. Devries.

HEAVY DRAFT HORSES.

Best Stallion, \$50, Geo. Patterson; best Horse Colt 3 years old, \$25, J. E. Devere; best Mare, \$30, T. L. Keene; best Horse Colt 2 years old, \$20, A. P. Forsythe; 2d best do., \$10, F. B. Graff; best Horse Colt 1 year old, \$10, W. T. Walters; best Team, \$40, George Patterson.

IMPORTED HORSES.

Best Quick Draft Mare, \$50, J. H. Rieman; best Heavy Draft Stallion, \$100, Wm. T. Walters; 2d best do., \$50, S. W. Ficklin; best Mare do., \$50, Wm. T. Walters; 2d do., \$25, W. T. Walters.

SWEETSTAKES,

Stallion, \$100, Gov. O. Bowie.

JACKS, JENNETS, AND MULES.

Best American Jack, \$25, T. J. Lee; 2d best do., \$15, Joseph Homes Jr; best pair Mules, \$20, D. Cookes.

TRIALS OF SPEED.

TUESDAY, OCTOBER 26, 1869.

FIRST RACE.

1st Premium, \$350, A. Johnson; 2d do., \$100, D. Logan.

SECOND RACE.

1st Premium, Silver Pitcher, A. T. Fawcett; 2d do., Silver Goblet, P. B. Pollard.

WEDNESDAY, OCTOBER 27,

FIRST RACE.

1st Premium, \$250, A. F. Fawcett; 2d do., \$125, D. Logan.

SECOND RACE.

1st Premium, \$200, W. W. Stephens; 2d do., \$100, Martin Sheeler, for A. T. Fawcett.

THURSDAY, OCTOBER 27,

FIRST RACE.

1st Premium, \$200, James Murphy; 2d do., \$100, A. Johnson.

SECOND RACE.

1st Premium, \$200, A. T. Fawcett; 2d do., \$100, Chas. A. Murphy;

FOUR YEAR OLDS.

1st Premiums, \$100, T. L. Keene; 2d do., \$50, Wm. T. Preston.

FRIDAY, OCTOBER 29,

FIRST RACE.

1st Premium, \$300, Gov. Oden Bowie; 2d do., \$150, F. M. Hall.

SECOND RACE.

1st Premium, \$100, Henry Fraley.

POULTRY AND OTHER BIRDS.

Best Collection, \$20, S. Schley; 2d do., \$10, G. W. S. Baker; best trio Shanghais, \$2, S. Schley; 2d best do., \$1, S. Schley; best trio Games, \$2, S. Schley; 2d best do., \$1, S. Schley; best trio Black Spanish, \$2, S. Schley; best trio do. under 1 year, \$2, S. Schley; best trio Black Polands, \$2, S. Schley; 2d best do., \$1, S. Schley; best trio Hamburg, \$2, S. Schley; 2d best do., \$1, S. Schley; best trio Seabright Bantams, \$2, S. Schley; best trio Bantams, \$2, S. Schley; best pair Turkeys, \$2, L. Mongar; best pair Geese, \$2, J. Kohlheeps; 2d best do., \$1, W. H. Oler; best Imported Fowls, \$3, S. Schley.

BEES AND HONEY.

Best Honey in comb, \$5, R. Colvin; best Hive Bees and Honey in Comb, \$5, R. Colvin; best Hive Italian Bees, \$3, R. Colvin; best Hive Bees and Movable Combs, \$3, R. Colvin.

BUTTER AND CHEESE.

Best Fresh Butter, \$5, Wm. H. Perot; 2d best do., \$3, Wm. H. Smith; best Salted Butter, \$3, Mrs. C. M. Plater.

FARMS,

Best Cultivated Farm, \$100, Franklin Groomes.

TOBACCO.

Best Sample, \$20, G. W. Dorsey.

GRAIN AND ROOT CROPS.

Best White Corn, \$3, Mrs. Geo. Brown; best Yellow Corn, \$3, Daniel Tillen; best 5 acres Oats, \$10, Harry Shriver; best 3 acres Irish Potatoes, \$10, A. D. Brown.

GARDEN VEGETABLES.

Best Assortment, \$20, A. D. Brown; 2d best do., \$15, S. & J. Parry; best Turnip Beets, \$1, A. D. Brown; best Cabbage, \$1, Jno. Gorsuch; best Carrots, \$1, W. S. G. Baker; best Parsnips, \$1, W. S. G. Baker; best Egg Plants, \$1, A. D. Brown; best Onions, \$1, A. B. Brown; best Sweet Potatoes, \$1, A. D. Brown; best Pumpkins, \$1, Mallilieu & Bro.; 2d best do., \$1, Thomas Davis; best Winter Squashes, \$1, A. D. Brown; best Tomatoes, \$1, A. D. Brown.

FRUITS.

Best collection of Apples, \$5, M. Bartheson, 2d best do., \$3, M. B. Buck; best variety of Fall Pears, \$4, E. L. Rogers; best collection Native Grapes, \$6, M. B. Buck; best Grapes raised under glass, \$5, J. D. Richardson; 2d best do., \$3, Mrs. George Brown.

CUT FLOWERS AND FLORAL DESIGNS.

Best collection cut Flowers, \$2, Mrs. Alex. Brown; best Decorative Design, \$5, Miss Perine; best Basket with Flowers, \$2, Mrs. Alex. Brown.

FRUIT AND ORNAMENTAL TREES, &c.

Best collection, \$5, John Feast.

AMERICAN WINES AND CORDIALS.

Best dry Wine, \$5, M. B. Buck; 2d best do., \$3, M. B. Buck; best Wine made by exhibitor, \$5, M. B. Buck; best home-made Cordial, \$3, Mrs. T. Hooper; best do. Cherry Bounce, \$3, Henry McGowan; best do. Wine, \$3, Dr. E. J. Hinkle.

DOMESTIC AND HOUSEHOLD MANUFACTURES.

Best Quilts, \$2, Mrs. Thos. Hooper; 2d best do., \$1, J. C. Mathias; best Blankets, \$3, Mrs. M. Shipley; best Long Hose, \$1, Mrs. Hooper; best Hearth Rug, \$3, Mrs. McEvoy; best Woolen Mittens, \$1, M. E. Burnham; best Knit Half Hose, \$1, Mrs. Hooper; best Worsted Work, \$1, Mrs. F. Westerman; best Embroidery, \$1, Mary C. Shriner; best Counterpane, \$2, Mrs. Shipley, 2d best do., \$1, Mrs. Hooper; best Wax Flowers, \$1, Miss Ewing; best Wax Fruit, \$3, Miss L. Weaver; best Soap, \$1, Mrs. Dr. Lynch; best Bread, \$2, Mrs. A. M. Duff; 2d best do., \$1, Mrs. Hooper; best Pound Cake, \$3, Mrs. Hooper; best Sponge Cake, \$3, Mrs. Hooper; best Preserves, \$1, Mrs. H. C. Ridgely; best Fruit Jelly, \$1, Mrs. H. C. Ridgely.

IMPLEMENTS AND MACHINES.

DIVISION No. 1.

Best one horse Plough, \$3, R. Sinclair; best two horse do., \$4, Thomas Norris; best three horse do., \$5, N. W. Slade & Co.; best Subsoil do., \$5, R. Sinclair & Co.; best Hillside do., \$3, to same; best Gang do., \$3, to same; best Sulky do., \$5, Penna. Agr'l Manf'g Co.; best Potato do., \$2, R. Sinclair & Co.; best Corn Cultivator, \$3, Penna. Agr'l Manuf'g Co.; best Tobacco do., \$3, R. Sinclair & Co.; best Field Roller, \$5, to same; best Grain Drill, \$5, Wagoner & Matthews; best Drill with Guano and Seed Attachment, (Buckeye Drill,) \$10, R. Sinclair & Co.; best Broadcast Sower for hand power, \$3, Spear Bros.; best Corn Planter for horse power, \$3, R. Sinclair & Co.; best Garden Seed Sower, \$2, J. L. Allen of N. J.

DIVISION No. 2.

Best Machine to Thresh and Clean, for from

6 to 10 horses, \$15, Linton & Lamotte; best do. for from 2 to 6 horses, \$10, to same; best Threshing Machine without Separator, \$5, E. Whitman & Sons; best Straw Carrier with Attachment for Thresher, \$3, to same; best Sweep Horse Power for from 6 to 10 horses, \$10, Linton & Lamotte; best do. for from 4 to 6 horses, \$5, H. S. Meyers; best Mowing Machine for 2 horses, \$10, Jas. Brewster; best Reaping and Mowing Machine, \$10, L. H. Lee; best Reaper and Mower with Self-Raking Attachment, \$15, E. Whitman & Sons; best Hay Tedder, \$5, Heacock & Co.; best Sulky or Wheel Horse Rake, \$5, Thomas Norris & Son; best Revolving Horse Rake, \$3, E. Whitman & Sons; best Reaper, (special premium,) \$10, to same.

DIVISION No. 3.

Best Grain Fan, \$5, J. Montgomery; best Corn Sheller for horse power, \$5, R. Sinclair & Co.; best double spout do., \$4, N.W. Slade; best Hay and Straw Cutter for hand and horse power, \$5, R. Sinclair & Co.; 2d best do., \$3, E. Whitman & Sons; best do. by hand power, \$5, Sinclair & Co.; best Vegetable Cutter, \$2, E. Whitman & Sons; best Horse Hay Fork, \$5, A. J. Nellis; best 4 Grain Cradles, \$3, E. Whitman & Sons; best 4 Grain Scythes, \$3, to same; best half dozen Hand Hay Rakes, \$3, to same; best do. Garden Rakes, \$2, D. C. Hartman; best do. Pitchforks, \$2, to same; best do. Digging Forks, \$2, to same; best long handle Shovels, \$2, E. Whitman & Sons; best Briar Scythe, \$1, Sinclair & Co.

DIVISION No. 4.

Best Hay Press, hand power, \$8, E. Whitman & Sons; best large Cider Press, \$8, Sinclair & Co.; best small do., \$2, E. Whitman & Sons; best Clover Huller, \$3, James Brewster; best Stump Puller, \$5, Heacock & Co.; best Churn, \$3, E. Whitman & Sons; best Platform Scales, \$4, Walter F. Moore; best Ox Yoke and Bows, \$2, Sinclair & Co.; best self-operating Gate, \$10, W. E. Porter; best Machine for Grinding Reaper Knives, \$3, Heacock & Co.; best Road Scraper, \$2, E. Whitman & Sons.

DIVISION No. 5.

Best Portable Steam Engine, \$25, Geo. Page & Co.; best Portable Steam Mill, \$10, Geo. Page & Co.; best Saw Mill for Lumber, \$15, Geo. Page & Co.; best Saw Mill for firewood, \$10, E. Whitman & Sons; best Shingle Machine, \$5, Geo. Page & Co.; best Drain

Tiles, assorted samples, \$3, Henry Gibson; best Sorgho Mill for small crops, \$5, E. Whitman & Sons; best Sorgho Evaporator, \$5, W. H. Birdsall; best Corn and Cob Mill, \$5, E. Whitman & Sons; best Farm Pumps, hand power, \$3, R. W. Crouse; best Water Ram, \$5, S. Register & Son; best Cooking Stove, \$5, Armstrong, Cunningham & Co.; best Washing Machine, \$5, E. Whitman & Sons; best Clothes Wringer \$3, Sinclair & Co.; best Sewing Machine, \$5, Wheeler & Wilson;

HARNESS AND LEATHER MANUFACTURES.

Best set Cart Gears, \$3, J. D. Hammond; best set Carriage Harness, \$5, J. D. Hammond; 2d best do., \$3, S. Hunt; best set Buggy Harness, \$3, J. D. Hammond; best Farm Saddle, \$3, W. D. Macy; best Man's Saddle and Bridle, \$5, J. D. Hammond; 2d best do., \$3, J. D. Hammond; best Lady's Saddle and Bridle, \$5, J. D. Hammond; best Traveling Trunk, \$3, J. D. Hammond.

The Other Side of the Small Fruit Business.

Instances in which great profits have been made under favorable circumstances by raising small fruits, berries, and other special crops, have often been published. Strawberries, raspberries, blackberries, have paid from two to six hundred dollars per acre per year. New Jersey and the Western part of Michigan are localities of which great stories have been told. P. S. Linderman of South Haven, Mich., presents a view of the other side of the subject in the Western Rural. He shipped 12 crates, 192 quarts of Lawtons to Chicago. Freights, truckage, commission and crates cost \$7.55; the berries sold for \$12.64, leaving \$5.09, or 2 cents, 6 1/2 mills per quart for picking, shipping, postage, &c., to say nothing of raising, capital invested, &c. He tried a patch of strawberries, but had ploughed them up. One of his neighbors had one and one-half acres; he tried them two years and has ploughed up most of them. His only object, he says, in confessing these failures, is to caution those not acquainted with the berry business to "make haste slowly," in entering upon the business of raising them for market.

A New Jersey correspondent of the Gardeners' Monthly, who has been experimenting on "Ten Acres Enough," sent several chests of strawberries to the Philadelphia market one day last season, for which he paid three cents a quart for picking. They were sold by his commission man for four cents a quart.—*New Eng. Far.*

Prof. Miles on System in Farming.

Prof. Miles, of the Michigan Agricultural College, delivered the annual address at the late Calhoun Co. (Mich.) Fair. A friend sends us a copy, and we find, upon perusing it, that it is so replete with sound sense and practical suggestions, that we shall give our readers the benefit of much of its matter, from time to time, as our space will admit. Speaking of farming generally, he says:

Thoroughness in all farm operations is essential to the highest success, but this cannot be readily attained where labor is dear, without the aid of machinery.

Does not, then, the great gain in the use of improved implements consist, in the main, in a saving of time that can be profitably expended, not only in the more thorough performance of the work in hand, but in other directions where an ample return may be reasonably expected?

If required to point out the great defect of American husbandry, I should unhesitatingly reply, *want of system*.

By this I mean the lack of attention to the relations existing between the various departments of farm economy.

Each operation on the farm and each department of its management should be conducted with reference to its influence on every other department and interest, in accordance with a definite plan, extending through a series of years. The aggregate of results should be considered, rather than numerous special interests that are entirely disconnected and have nothing in common.

The farm is a manufactory—the soil a machine for converting mineral and decaying organic substances into vegetable products.

Unlike other machines, a portion of raw material for the manufacture of its peculiar products constitutes a part and parcel of the machine itself, that cannot be diminished without involving a positive loss of power and efficiency.

Here as in the use of other machines, it is necessary to furnish an abundant supply of the raw material, or the manufactured article cannot be produced. In other words, the vegetable products of the farm are obtained at the expense of the elements of fertility in the soil, while the universally prevailing law of compensation requires an equivalent return to be made to maintain its productiveness.

If the hay and grain raised upon the farm are all sold off, a portion of the soil goes with them, and the farm is by so much diminished in value.

To prevent this enormous waste, other machinery, in the shape of live stock, is provided to convert the vegetable products manufactured by the soil into animal products of still greater value, and at the same time to return to the soil, for future use, the waste materials resulting from the process.

Each set of machinery employed in this farm factory is thus furnishing raw materials to be worked up by the other, and a constant circulation of materials is produced.

If we accept the law of modern philosophy that motion is force, we cannot avoid the conclusion that the more rapid and active the circulation of matter in the machinery of the farm, the greater will be the results accomplished.

A correct system of farm management involves the adjustment of this machinery so as to give the largest profit with the least possible loss, to the farm, of the elements of fertility and wealth.

In carrying into practice any consistent system, particular attention should be given to the alternation or rotation of crops, and a prominent place should be given in the rotation to those crops which, when consumed on the farm, are of greatest value in restoring the elements of fertility to the soil.

Moreover, by introducing a variety of crops in rotation, and making a judicious selection of animals to consume the coarser and valuable vegetable products, the farmer, from the variety of resources, is more sure of obtaining remunerative returns for his labor in the course of a series of years, than when depending upon a single staple, which, by a decline in the market, may subject him to serious loss.

It will be perceived, from what has already been said, that one great object in planning a system of farm economy, should be to economize and make available a sufficient supply of manures to maintain, and if possible, increase the productiveness of the soil. This is, in fact, the sheet anchor of good husbandry.

That eloquent writer, H. C. Carey, has truly said:

"Of all things needed for the purposes of man, the one that least bears transportation is manure, and yet this is of all the most im-

portant. Each crop draws from the earth certain elements, and if these are not replaced, that crop must soon cease to be produced. It is indispensable that man be enabled to pay the debt which he contracts toward mother earth, when taking from the soil the elements of those commodities required for his support. It is the condition upon which alone progress can be made."

Judgment, skill, and intelligence, are requisite in devising and carrying out a system adapted to the wants of each particular farm. Although the general principles which should guide in practice are well established and easily understood, yet in their detailed application in each locality, much must be left to the judgment of the individual, who will have a wide margin left for varying particulars, without conflicting with those landmarks that cannot with impunity be violated.

The farmer, above all other men, from the very nature of his calling, is brought most intimately into contact with the workings of nature. In his every-day life he is incessantly striving with nature for the mastery, and aiming to give direction to the natural forces around him.

Light, heat, motion, force—mutually convertible, protean in form, pervading all nature, and taking an active part in its varied processes—are agents that he must guide subservient to his will, or like an untamed steed, that scorns control, they mar his plans and thwart his purposes.—*Western Rural*.

THE DEPTH OF TREES.—There has recently sprung up some controversy as to the proper depth that trees should be transplanted, and as is usual in controversies of this kind among practical men, there is not the least hope of their ever coming to a common opinion on the question. And this is natural and perhaps as it should be. Different kinds of trees frequently require different modes of culture, beginning with the planting. For instance, dwarf pears should be planted deep, two or three inches below the union of the quince with the pear, in all soils where a dwarf pear ought to be. A fir or spruce should be planted shallow, and so, as a rule, should standard pear as well as apple trees. This exception should however be made; in light, porous soils they may be gauged deeper than in clay moulds. Thus the heavier the soils the shallower should the trees be planted. Such is *our* experience.—*Ex.*

My Experience in Pork Raising.

The result of my own experience for several years past has convinced me that the prevailing error in pork raising is in overfeeding. The *hoggyish* appetite of the swine "growing with its growth and strengthening with its strength," has met with too ready an acquiescence on the part of his keeper, and has not rewarded at the meat tub the extravagant outlay which has been deemed necessary to satisfy it. Beyond a certain point in feeding swine, no beneficial results are attained; on the contrary, the undue development of the stomach of the animal by producing an unnatural craving for the amount of food adapted to the capacity of the stomach, rather than to the requirements of growth and development, produces waste and consequent loss of profit. This, briefly stated, is my theory, based upon facts.

Several years since, I began to practice more care in the raising of swine, weighing and measuring all the corn, meal and other feed used in raising a definite number, and noting the exact amount necessary for the largest production of pork. The want of care and attention to this matter will almost invariably, as I presume the most of your readers will admit, carry the expence of raising pork nearly if not quite up to the value of the production.

Year before last, corn was high and pork cheap. In a conversation with some of my neighbors on the question of the profit or loss of making pork during that season, one stating that his pork would cost him fifteen cents per pound, and another that he could not raise it for less than twenty-five cents, I ventured to make the assertion that with corn at \$1.50 per bushel, and pork but ten cents per pound, I would suffer no loss. This was in December. I procured corn and meal at the above named price, and having three swine to fatten, I ascertained their weight at that time, and at the time of killing, which was in the latter part of February following. An exact estimate of the increase in weight showed that I had succeeded within one-half pound of pork of accomplishing the financial feat promised to my doubting neighbors.

My process of feeding is as follows:—I take a spring pig and commence by giving him from a gill to half a pint of raw meal, mixed with a sufficient quantity of milk to wet thoroughly, to which I add about a half a pint

of milk three times a day, with a few potatoes boiled. I feed a few potatoes until the pig is about four months old; my object in giving the potatoes being not so much for food as to produce a sufficient development of the stomach. After that, until six months old, I give three pints of raw meal with about four quarts of milk a day, occasionally giving a few potatoes. After that until fattening time, I feed two quarts of meal with four quarts of milk or water per day. During fattening time I feed the swine one quart of meal with one quart of drink three times a day. If water is accessible to the animal at any and all times, it will be found that he will not drink a pint a day in addition to the above named quantity given with the food.

For the past four or five years I have raised and fattened from three to five hogs per year on the above quantity, averaging fifteen pounds of pork to a bushel of corn. It will be seen that I discard swill and house slops as worse than useless, having demonstrated from actual experience that these *sloppy* messes, so conveniently disposed of and so lavishly fed out to the swine, render a larger quantity of more substantial food necessary in fattening time, in order to satisfy the cravings of appetite, without a corresponding increase of pork produced.

My experience has demonstrated, to my own satisfaction at least, that meal fed in a raw state is better than when cooked. I now have a hog one year old the 21st, of last June, raised on the above named quantity of food, which now, Sept. 21st, girths five feet, and measures five feet ten inches in length, estimated to weigh 450 pounds dressed pork. I commenced feeding this swine for fattening the three quarts of meal per day, on the 5th day of Sept.—*Winslow Arey, Hampden, in Maine Farmer.*

The Hyacinth in Glasses.

Of all the plants with which we are acquainted, the Hyacinth is the most suitable for this elegant though somewhat unnatural system, of culture, and failures may be more generally traced to mistaken kindness than to neglect. Its roots, like those of other plants, shun the light with instinctive care; therefore, dark-colored glass should be selected. Never use spring water if you can get clear rain water. Place the bulbs in the glasses and fill with rain water so that it barely touches the

bottom of the bulbs, and set them in a dark, cool, dry cellar or closet. When the bulb rests in the water at once, there is slight danger of mouldiness ensuing.

Examine them occasionally, and remove gently any scales that may be decaying, but be very careful not to injure the young roots. When the glasses are moderately filled with roots, which will be the case in three or four weeks, remove them to where the plants will receive moderate light; and as soon as the plants assume a healthy green color, to the lightest possible situation, and where they can have abundance of fresh air. A close, heated atmosphere is very unfavorable to the development of handsome spikes of bloom. When in actual growth, keep them as near the glass as convenient, and turn them occasionally to prevent long, weakly, ill-shaped stems; the water should be changed at least every three weeks, using pure rain water, of about the same temperature as the bulbs may be growing in. The flowers will receive a check if you do not attend to this. A small piece of charcoal will keep the water sweet longer.

When the roots have nearly reached the bottom of the glass, there sometimes collects at the extremity of each a pellicle or covering of mucous matter. This soon stops up the mouths of the roots, by which the food of the plants is conveyed to the leaves. To prevent this the roots should be carefully drawn out of the glasses, and a wide vessel should be placed handy filled with clean water. In this immerse the roots of the bulb, and draw the mass carefully through the hand, pressing them gently. Do this two or three times until the roots are white and clean. Whilst one person is doing this, let another be washing out the glass, and wiping it quite clean and dry. Then gradually work the clean washed roots into the glass, before putting in any water. To get them in when numerous, it will be found necessary to twist them around until they reach their old quarters and the bulb rests on the neck of the glass; then fill the glass with clear rain or soft water, and replace it in the window. Once washing will generally be sufficient. After this no more care will be necessary, excepting occasionally changing the water.

For giving vigor to the plants, and color to the flowers, we know of no better means than to dissolve in a quart of rain water an ounce of guano, and to pour one tea-spoonful of that into each bottle a fortnight after the flowers begin to appear.—*B. K. Bliss & Son's Catalogue.*

SUNDAY READING.

God's Gift of Corn; A Sermon for Harvest-Tide.

[CONTINUED.]

"Thou crownest the year with Thy goodness; and Thy clouds drop fatness. They drop upon the pastures of the wilderness: and the little hills rejoice on every side. The pastures are clothed with flocks; the valleys also are covered over with corn: they shout for joy, they also sing."—PSALM LXX. 11—13.

2. There is another way in which the harvest-fields remind us of the unity of mankind, and knit us to the past—carrying our thoughts far back into the days of old, and shewing how closely each generation of men depends upon God's faithful care for their supply of daily bread. For the harvest is a yearly reminder of the great covenant which long ago God made with mankind, and of the faithfulness with which He keeps it. You remember that one part of the promise which God made to Noah, as he and his family stood alone in the desolated world, was, that seed-time and harvest should never cease, nor be interrupted again till the end of the world. And never yet has that promise failed. Never yet has the world been ruined and destroyed by famine. Dearth and famines have indeed often been allowed here and there as punishments for men's sins, but never all over the world at once. If one land has suffered from drought or blight or storm, another has had abundant harvests: even as in old times when Canaan was afflicted, "there was corn in Egypt;" or as in our own days, when our harvests at home are poor and scant, God lets the abundance of other lands overflow to us.

But in any case we are bidden to remember that it is to our Heavenly Father's promise and faithfulness, each year renewed, that we owe the blessing of food. We really depend upon something higher and surer than our own toil or the "order of nature." And this, happy for us indeed, man's labor and industry might be in vain, the order of nature might fail; we have no certainty in them; but God's promise cannot fail, we may place the fullest trust upon it. Were it not so, we might every year be in fear of the possibility of starvation. One year's harvest lost throughout the world would, I suppose, inevitably bring starvation to all. For the corn is the wealth of the world; all its other riches, the coal or the iron, the silver or the gold, would be as worthless as the dust

if the riches of the harvest-fields were to fall us. So that in very truth, however men may toil and heap up to themselves "riches," it is really and simply upon God's promise alone about the harvest that they can depend for life's necessities. They are never independent, never safe in their own resources, never sure of more than the year's food measured out to them each year afresh. Think of this; and when you say "Give us this day our daily bread," make it a more thoughtful earnest prayer, and make more deep, more humble, and more grateful your feeling of dependence upon God's "crowning the year with His goodness," and for his ancient promise' sake "covering the valleys over with corn."

8. And this will lead us on to think how in a yet higher way the corn is a preacher to us about God's love and care for us. Do you know that corn is God's own special gift to us men? It comes straight to us from His hand. Of course all things that we have to use and enjoy come from God; but it is true to say that of all God's gifts for our bodily wants the corn comes more specially, more directly from Him than any. For those who have made the earth and its fruits their study, have found that God gave corn to men in the beginning just as it is now, "all perfect and ready for their use, for the very purpose of being their special food. All other plants which we now use for food are quite unfit for food in their natural condition, as God first made them; but men have had to learn by slow degrees to train and cultivate them, and so, as it were, to change them from their wild nature into usefulness. It was not so with corn: it came direct from the Creator's hand, ready-fashioned for man's use.

So that, you see, the corn is indeed, as was said just now, a preacher of God's love, as it were a messenger from heaven. And when the heathen of old thought that one of their false gods had given them the corn, and called it after the god's name, they were in their blindness very near the truth, and may well give us a lesson of looking upward more than we do, and tracing the marks of God's presence even in things most common.

4. Finally, I shall ask you to reflect a moment or two how this that has been said about the corn may help you to realize those yet higher truths of which corn and its use are Bible types.

(To be continued.)

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THE AMERICAN FARMER.

Persons ordering Goods of our advertisers will confer a favor by stating that they saw the advertisement in the "American Farmer."

WORTHINGTON & LEWIS,
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Baltimore Markets, Nov. 20, 1869.

COFFEE.—Rio, 16½a17½ c., gold, according to quality; Laguayra 16a18½ cts., and Java 22a23½ cts., gold.

COTTON.—We quote prices as follows, viz:

Grades.	Upland.	Gulf.
Ordinary.....	23 a—	00
Good do.....	23½ a—	00
Low Middling.....	24½ a24½	00
Middling.....	25½ a24½	00

FERTILIZERS.—Peruvian Guano, \$93a—; California, \$70; Rodunda Island, \$30; Patapco Company's, \$60; Reese & Co's Soluble Pacific Guano, \$60; Navassa Guano, \$30; Chesapeake Guano, \$60; Flour of Bone, \$60; G. Ober's (Kettiewells) AA Manipulated, \$70; A do. \$60; Ammoniated Alkaline Phosphate, \$55; Alkaline Phos. \$45; Baltimore City Company's Fertilizer, \$40; do., Flour of Bone, \$60; do., Ground Bone, \$45; do., Poudrette, \$25; Baugh's Raw-bone Phosphate, \$56; Baugh's Chicago Bone Fertilizer, \$48; Baugh's Chicago Blood Manure, \$48; Maryland Powder of Bone, \$48; Rhodes' Super-Phosphate, \$50; Rhodes' Orchilla Guano, \$30; Lester's Bone Super-Phosphate \$35; Berger & But's Super-Phosphate of Lime, \$56; Andrew Coe's Super-Phosphate of Lime, \$60; Zell's Raw Bone Phosphate, \$56; Zell's Super-Phosphate of Lime, \$60—all per ton of 2,000 lbs.; Rath's Challenge Soluble Phosphate, \$60; Whann's Raw Bone Phosphate, \$56. Pure Ground Plaster, \$14.75 per ton, or \$2.25 per bbl. Shell Lime slaked, 6c., unslaked, 10c per bushel, at kilns.

FLOUR.—Howard Street Super, \$5.00a5.25; High Grades, \$5.00a5.25; Family, \$5.50a7.50; City Mills Super, \$5.25a5.75; Baltimore Family, \$10.00.

Rye Flour and Corn Meal.—Rye Flour, \$5.75a6.00; Corn Meal, \$5.00.

GRAIN.—Wheat.—Good to prime Red, \$1 28a1.22; White, \$1.35a1.40.

Rye.—\$0.85a1.00 per bushel.

Oats.—Heavy to light—ranging as to character from \$4.75c. per bushel.

Corn.—White, \$0.80a0.95; Yellow, \$0.80a1.00 per bushel.

HAY AND STRAW.—Timothy \$21a23, and Rye Straw \$20 all per ton.

PROVISIONS.—Bacon.—Shoulders, 13½a— cts.; Sides, 15½a17 cts.; Hams, 21a— cts. per lb.

SALT.—Liverpool Ground Alum, \$1.80a1.90; Fine, \$2.60 a2.80 per sack; Turk's Island, 50 cts. per bushel.

SEEDS.—Timothy \$3.50a3.75; Clover \$7.25a8.00; Flax \$2.55.

Tobacco.—We give the range of prices as follows:

Maryland.	
Frosted to common.....	\$5.00a 5.50
Sound common.....	7.00a 8.00
Middling.....	9.50a11.00
Good to fine brown.....	11.50a15.00
Fancy.....	17.00a30.00
Upper country.....	7.00a25.00
Ground leaves, new.....	5.00a11.00

Ohio.	
Inferior to good common.....	4.00a 6.00
Brown and greenish.....	6.00a 8.00
Medium to fine red and spangled.....	9.00a12.00
Fine spangled.....	12.00a26.00
Fine yellow and fancy.....	30.00a40.00

WOOL.—We quote: Unwashed, 30a33 cts.; Tub-washed, 40a1 cts.; Pulled 30a33 cts.; Fleece 40a45 cts. per lb.

CATTLE MARKET.—Common, \$4 50a5.25; Good to fair, \$5.00a6.75; Prime Beeves, \$6.75a7.75 per 100 lbs.

Sheep.—Fair to good, 3½a4½ cts. per lb., gross.

Hogs.—\$13.25a14.25 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by HEWES & Co., Produce and Commission Merchants, 67 Exchange Place.

BALTIMORE, Nov. 20, 1869.

BUTTER.—Western solid packed 25a30 cts.; Roll 30a40; Glades —a—; New York 40a48; Franklin street 37 cts.

BEEFWAX.—35a40 cts.

CHEESE.—Eastern, 18½a19; Western, — to — cts.

DRIED FRUIT.—Apples, 7½a8; Peaches, 8a12.

EGGS.—38a40 cents per dozen.

FEATHERS.—Live Geese, — to — cents.

LARD.—Western, 19a20; City rendered, 20½ cts.

TALLOW.—10a11 cents.

POTATONS.—60a75 per bushel.

NEW ADVERTISEMENTS—DEC.

Fertilizers—R. J. Ruth & Co.

“ William H. Oler.

Plants, Seeds, &c.—J. D. Richardson.

Fowls—J. D. Richardson & Co.

Stock—L. B. Silver.

“ J. Howard McHenry.

Organs—H. Sanders & Co.

“ E. P. Needham & Son.

Magazines—E. P. Needham & Son.

“ C. F. Miner & Co.

“ Hy. T. Williams.

Subscription Agents—Hanna & Lewis.

Agents Wanted—H. Crawford & Co.

“ Hudson River Wire Works.

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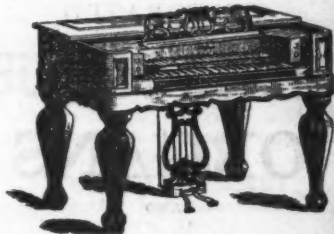
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This *Reaper* took the Gold Medal at the Great Field Trial held at *Auburn, N. Y.*, in July, 1866, as the best Self-Rake on the ground.

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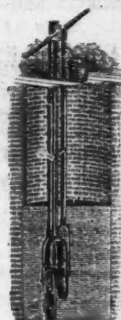
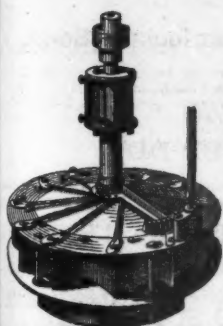
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Applied undissolved to the stems of young trees, it will afford complete protection from rabbits, mice, squirrels, &c.

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For curing scab, and destroying insects on Sheep. Put up in same form, and at same price as PLANT PROTECTOR.

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To Raise the Deposit from the Bottom of Ravines, Coves, Creeks, Rivers or other places inaccessible to teams.

It works with facility 170 feet from the capstan; will lift any marl clean of rocks, carting 125 to 150 loads a day.

The late M. Tilghman Goldsborough, Esq., of Talbot Co., Md., writing under date of 20th January, 1860, says in regard to this machine:

"I had it worked in the presence of several gentlemen, just to see the 'modus operandi,' and to be satisfied of the power and efficiency of the machine; and two mules of medium size appeared to have sufficient power to deliver on the shore a bucket full, equivalent to a cart load, in about six minutes. The mud at that trial was dropped on the creek bank. The mules were awkward and shy of the strangers present, and the hands were awkward at the novel occupation. We brought on shore about fifteen cart loads, and I feel entirely confident that I shall not be disappointed in the machine when it is put at full and regular work. Some of our farmers who have taken advantage of low tides and ice in the creeks to obtain small quantities of this mud, think it a very valuable manure; indeed that opinion appears to be universal here, but as the machine is of recent invention, and only a few have been erected, there has not been time to test the actual value of the mud as a fertilizer."

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"Having successfully tested the working of your Mud Lifter, I have the further pleasure of testifying to the efficacy of the mud. You may remember that in December last, when the machine was first erected, we lifted some twenty loads of mud with it from the bottom of a salt water cove. This was acted on by the frost, and this spring was put on a point of thin land, in my corn field, where I never have had a vigorous crop of any sort, but now the land on which the mud was applied has a dark green, and vigorous growth of corn, entirely superior to the adjoining land, although the land undressed with mud is rather better, and both had the same dressing of shell marl. In this case the mud has had most unmistakably a profitable effect. The land is a yellow clay loam."

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July-

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TRIPLE SILVER PLATED WARE,

A full stock, Spoons and Forks, Cutlery, Clocks, Bronzes and Fancy Goods. Agents for Waltham American WATCHES, in Gold and Silver Cases. Watches Repaired. July-6t.

50,000 Maria Perla de las Antillas Havana Concha Cigars.

Packages of 1000. Manufactured of genuine Vuelta Arriba Tobacco of our own importation. A full flavored Havana Cigar. Well seasoned. Sample boxes of 100 sent by Express at \$3, C. O. D., free of expense.

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WINCHESTER ACCOMMODATION TRAIN leaves Baltimore daily at 4.10 P. M. (except Sunday.) Leaves Winchester for Baltimore daily (Sundays excepted) at 5 A. M., connecting at Frederick Junction with train for Frederick, and at Hagerstown Junction with train for Hagerstown.

THE ELLICOTT'S MILLS TRAIN leaves Baltimore at 6.20 and 9.50 A. M. and 1.20 and 5.10 P. M. Returning leaves Ellicott's Mills at 7.30 and 11.10 A. M. and 2.40 and 6.30 P. M.

FOR HAGERSTOWN.

Leave Baltimore at 8.15 A. M. and 4.10 P. M., connecting at Hagerstown Junction with Washington county Railroad, arriving at Hagerstown at 2.50 and 9.20 P. M. Returning, leave Hagerstown at 5.10 and 10.25 A. M., arriving in Baltimore at 10.40 A. M. and 6.05 P. M.

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Leave Baltimore at 8.15 A. M. and 4.10 P. M., arriving at Winchester at 8.05 and 9.35 P. M. Returning, leave Winchester at 5 and 10.15 A. M., arriving in Baltimore at 10.40 A. M. and 5.05 P. M.

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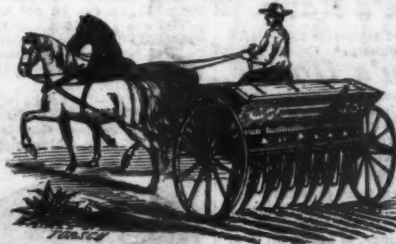
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